IMPROVING A HOSPITAL'S JUST CULTURE ENVIRONMENT: REFRAMING NURSE LEADER RESPONSES TO ADVERSE EVENTS THROUGH EDUCATION AND ROLE PLAY

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A dissertation submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Nursing Practice (Healthcare Systems) in the Department of Nursing in the School of Nursing.

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ABSTRACT

Renée Pouliot Bridges: Improving a hospital's just culture environment:
Reframing nurse leader responses to adverse events through education and role play
(Under the direction of Cheryl B. Jones)

This quality improvement project addressed nurse leaders' perceptions of Just Culture concepts and their application of Just Culture in situations to create a learning environment following after an adverse event. An educational intervention was designed to include content on Just Culture concepts, use of the Just Culture Algorithm©, event investigation, case scenario reviews, and opportunities to practice skills learned through role play. The intervention consisted of two one-hour educational sessions. A survey to assess nurse leaders' perceptions of Just Culture was administered pre- and post-intervention, using the *Just Culture Assessment Tool* (JCAT). The JCAT was scored on a seven-point Likert-type scale, where 1 = strongly agree, and 7 = strongly disagree. Thus, the goal was for nurse leaders' responses post-intervention to be lower scores, reflecting greater agreement with the principles of Just Culture represented by JCAT dimensions.

Nurse leaders, those in formal nurse leader positions, were invited to participate in the educational program. Fifty-five participants completed both sessions, 67 in educational session one, and 62 in educational session two. Responses to all surveys were compared using t-tests: the "matched" pre-post responses (n = 8) were compared using a paired t-test, and then all responses (n = 22) were compared using an independent t-test.

The analysis of the paired t-test indicated there were no significant differences in mean scores. However, the largest difference observed was on the dimension of *openness of communication*, with post-intervention scores being 1.625 points lower than pre-intervention scores (95% CI [-6.356, 9.606]).

The results of the independent t-test comparing participants completing only pre- or post-intervention surveys found lower JCAT scores on the following dimensions: feedback and communication about events ($t_{35.473} = 2.467$, $p = 0.029$), and openness of communication ($t_{29.341} = 2.680$, $p = 0.038$). The findings of this project indicate that the educational intervention may improve nurse leaders' responses regarding communication, especially feedback about events and openness of communication specific to Just Culture. Future projects are needed to understand how such an educational session affect nurse leaders' knowledge of Just Culture principals and concepts, and the extent to which they actually apply them in practice.

To all healthcare workers who tirelessly pursue safety, and especially the nurses who are speaking up for safety, caring for patients, and supporting healthcare during the COVID-19 pandemic

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LIST OF ABBREVIATIONS AND SYMBOLS

AE = Adverse Events

AHRQ = Agency for Healthcare Research and Quality

ANCC = American Nurses Credentialing Center

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CAUTI = Catheter-associated Urinary Tract Infection

CE = Continuing Education

CEO = Chief Executive Officer

CFIR = Consolidated Framework for Implementation Research

CI = confidence interval

CINAHL = Cumulative Index of Nursing and Allied Health Literature

CLABSI = Central-line-associated Blood Stream Infection

CMS = Centers for Medicare and Medicaid Services

CN IV = Clinical Nurse IV

CNO = Chief Nursing Officer

DNP = Doctorate of Nursing Practice

HAPI = Hospital-acquired Pressure Injury

HRO = High Reliability Organization

LIST OF ABBREVIATIONS AND SYMBOLS

HSPSC = Hospital Survey on Patient Safety Culture

IOM = Institute of Medicine

IRB = Institutional Review Board

IT = Information Technology

JCAT = *Just Culture Assessment Tool*

LMS = Learning Management System

MeSH = Medical Subject Headings

PDCA = Plan, Do, Check, Act

PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses

PSO = Patient Safety Organization

QI = Quality Improvement

® = Registered

ROL = Review of Literature

TL = Team Leader

US = United States

CHAPTER 1: INTRODUCTION

Nurse leaders in health care organizations may hold both informal or informal positions. Informal nurse leaders serve in a variety of roles, such as charge nurse, or preceptor, and do not typically hold a formal position or title within the organizational structure (Hegenbarth, Rawe, Murray, Arnaert, & Chambers-Evans, 2014; Normand, Black, Baldwin, & Crenshaw, 2014; Ross, 2014; Sherman, & Eggenberger, 2009). Downey, Parslow, and Smart (2011) defined informal nurse leaders as expert nurses who exhibit the following leadership characteristics: share knowledge, motivate the entire team, are recognized as a leader among their peers, and are high performers. Nurses in formal leadership positions in hospitals often fill a variety of roles, as shown in Table 1. These roles – from the front line on the patient care unit, to the very highest level in the nursing and hospital organization – are essential to ensure the delivery of safe, high-quality patient care.

Table 1. Definitions for Nurse Leaders

Title	Description
Chief Nursing Officer (CNO)	Top level of nurse leader, with ultimate responsibility for overseeing operations in the hospital and all patient care areas, supporting quality care across the continuum of care, guiding financial decisions impacting patient care areas, especially nursing, and supporting strategic planning for the organization.
Nursing Director	Mid-level nurse leader, with responsibility for managing service-line or other groupings of non-direct patient care departments. Responsibilities include: supervision of staff in areas of responsibility; performance management; budgetary and productivity oversight; and support for organizational initiatives.
Clinical Nurse Manager	Front-line nurse leader, with responsibility for managing one patient care unit or clinical area. Responsibilities include supervision of all staff in a patient care unit or clinical area; hiring staff; performance management; budgetary and productivity oversight; and support for organizational initiatives.
Clinical Nurse IV-Team Leader (TL)	Front-line nurse leader, with a combination of clinical and administrative responsibilities. Clinical duties include serving in the role of charge nurse and supporting the throughput and flow of the unit. Administrative duties include scheduling, documentation audits, staff observations, and supporting education and compliance for the unit.

Nurse leaders in formal leadership positions have direct supervisory responsibilities in health care organizations, and assume a duty to promote and improve patient safety in their areas of responsibility (e.g. overseeing patient care units) (Armstrong & Laschinger, 2006; Kanerva, Kivinen, & Lammintakanen, 2017; Xie, et al., 2017). These nurse leaders promote patient safety by seeking input from staff on patient care units, supporting teamwork among the various staff on units, sharing and exchanging information with staff and leaders across the health care organization, and taking on the role of change agent when patient safety initiatives are introduced (Kanerva, Kivinen, & Lammintakanen, 2017). At times, all leaders, and nurse leaders in particular, must take actions on behalf of their unit staff, as well as the organization as a whole, when they recognize weaknesses in the system that might jeopardize patient safety and quality, and participating in educational initiatives to strengthen teams and promote quality and safety on their units (Kanerva, Kivinen, & Lammintakanen, 2017). Because of their key roles in promoting patient safety in health care organizations, nurse leaders are in a unique position to affect the culture of safety in hospitals and other healthcare settings.

Much of the quality and safety literature has focused on the prevention of adverse events, and how these events can be used as opportunities for organizations, their leaders, and unit staff to learn from these events. An adverse event (AE) refers to unintentional harm, or injury, caused by medical mismanagement by health care team members as opposed to the underlying condition of the patient (Institute of Medicine, 2000, Sherwood & Bernsteiner, 2012). AE-induced harm may be temporary or permanent, and may not always be preventable or arise from medical errors (Martinez, Lehmann, Hu, Desai, & Shapiro, 2016, p.6). After an AE occurs in hospitals, leaders often conduct an investigation to thoroughly understand events leading up to the AE, by obtaining information through interviewing staff, observing unit operations, and conducting chart

reviews (Agency for Healthcare Research and Quality, 2017). These help to pinpoint sources of problems, develop and implement specific actions to prevent the AE from occurring in the future, share learnings with others, and develop and offer educational activities to improve patient safety culture (Xie et al, 2017).

Errors, defined as "the failure of a planned action to be completed as intended (i.e., error of execution) or the use of a wrong plan to achieve an aim (i.e., error of planning)" (Institute of Medicine (IOM), 2000, p. 28), are also associated with quality and safety, but differ from AEs. Errors occur at times due to latent conditions, such as poor system design, undetected manufacturing defects, gaps in supervision or training, or inadequate equipment (Reason, 1997). As defined, an AE that leads to an error is considered a "preventable adverse event" (IOM, 2000, p.28). When an AE does not lead to an error it is classified as an injury, or near miss (IOM, 2000, p.28). For the purposes of this DNP project, the term AEs will include errors because both errors and AEs can result from either a flawed system design or poor behavior choices by individuals. Examples of AEs include hospital-acquired pressure injuries (HAPIs), catheter-associated urinary tract infection (CAUTI), central-line associated blood stream infection (CLABSI), patient fall with or without injury, and patient medication errors.

Nurse leaders have options for responding to an AE when one occurs: ignore the AE, blame individual behavior, or conduct a systematic investigation. To ignore the AE avoids having conversations about the event that might help the unit staff learning from the AE experiences. When the nurse leader makes assumptions about the root cause of an AE, and assigns blame for an AE to the individual(s) involved in the AE, opportunities for learning are missed (Nembhard & Edmondson, 2006).

Ideally, when an AE occurs, the nurse leader conducts an investigation to describe the unfolding of the event, and identify lessons learned, and then share the AE and the lessons with other leaders and unit staff. This proactive approach is recommended and involves analyzing what happened, developing guidelines for actions that should occur after an AE, and implementing prevention activities such as sharing lessons learned (Mira et al., 2017). For this approach to be successful, nurse leaders need to promote an open environment in which unit staff are invited to discussions regarding AEs, encouraging communication (Garon, 2011; Nembhard & Edmondson, 2006). Hospitals urgently need formal leaders, especially nurse leaders, to promote patient safety goals, help prevent AEs, and respond to AEs when they occur. The creation of an environment where learning can occur following an AE and where justice is created through leader responses is referred to as a *Just Culture.*

Just Culture

In a primer on patient safety, David Marx (2001) described the healthcare environment as one that did not support safety for two reasons: 1) because errors occur in healthcare at an overwhelming rate—estimated as causing nearly 100,000 deaths per year (IOM, 2000), and 2) because, in general, a punitive environment exists in healthcare (Marx, 2001). Errors in healthcare now account for nearly 10% of deaths in the United States, making healthcare associated errors the third leading cause of death (Anderson, & Abrahamson, 2017; Makary, & Daniel, 2016). The lack of transparency in healthcare stands as a significant barrier to attaining patient safety (Institute of Medicine, 2000; Marx, 2001; National Patient Safety Foundation, 2015). In other words, staff and leaders in healthcare often hide errors when they occur, avoid talking about errors, and, subsequently, are unaware when errors occur or of the magnitude of errors in their own work area or organization (Kaufman, & McCaughan, 2013; Maxfield,

Grenny, McMillan, Patterson, & Switzler, 2005; Reason, 2000). Punitive environments and lack of transparency contribute to the magnitude of errors in healthcare (Morris, 2011).

Using knowledge from both systems engineering and law, Marx (2001) developed the concepts of Just Culture, the Just Culture Algorithm©, and was the catalyst for improvement in the healthcare systems. Well in advance of healthcare, the aviation industry created a safe environment for workers to bring forward concerns about an unsafe situation beginning in the 1970s (Marx, 2019b), that lead to improved reporting structures in aviation (Marx, 2019b), and a renewed focus for patient safety in healthcare (Reason, 2013). The 2000s brought an added safety focus, with the IOM report *To Err is Human* (IOM, 2000), and the introduction of Patient Safety Organizations (Marx, 2019b). Healthcare was ripe for change, and ready for the entrance of Just Culture. Reason (1997) describes the condition needed prior to implementing Just Culture: "an agreed set of principles for drawing the line between acceptable and unacceptable actions" (p. 205). In the healthcare community, there has been much discussion about how to navigate the need for a nonpunitive environment that supports staff reporting while still holding staff accountable (Marx, 2019b).

Marx (2001) described the philosophy and framework of Just Culture as a way to address the punitive environment and improve patient safety in health care organizations. This approach recognizes that the environment in health care organizations is often one in which health care staff are punished or blamed when mistakes or errors occur (Marx, 2001). Instead, Marx advocated that health care leaders create and adopt a philosophy of Just Culture that supports the proper review of errors, evaluation of the system, and supports staff appropriately following the errors.

In keeping with Marx's work, Freeman, Morrow, Cameron, and McCullough (2016) outlined four core principles of a Just Culture:

1) Human beings are not perfect and can make errors.
2) Humans make unsafe behavioral choices, and sometimes drift away from the known practices that are safe. These choices are usually unintentional, but occasionally are intentional, and become reckless behavior.
3) System design and employee behaviors must align with organizational values, else organizations are put at risk. Thus, organizational risks must be identified and reported to maintain a safe and Just Culture.
4) Organizational leaders must encourage broad participation in quality and safety activities by employees at all levels of the organization to support and maintain a Just Culture (36-37).

Leaders' actions following an AE are important in creating and maintaining a Just Culture. Marx (2009) advises leaders to utilize one of three actions when responding to AEs: "Console the human error; coach the at-risk behavior; or punish the reckless behavior" (p. 54). As the Just Culture model is updated, Marx (2019b) has updated the language to the following: "Accept the error; coach the at-risk behavior; sanction the reckless, knowledge, and purpose" (p. 243). Also, it is important to note that responses to the behaviors and investigation are completed "independent of the outcome" (Marx, 2009, p. 54), to support the Just Culture concept to focus on the behavioral choices and system design, not the outcome of the AE (Marx, 2019b, p. 242).

Just Culture is one element of a culture of safety. Patient safety culture has three elements: learning culture, Just Culture, and reporting culture (Reason, & Hobbs, 2003). Learning culture is defined as a culture that uses the differences between what is intended and

what actually happens to "challenge its basic assumptions—and has the will to change them when they are shown to be maladaptive" (Reason, & Hobbs, 2003, p. 146). Reporting culture is present when there is an environment of trust, where people are comfortable to confess their errors and near misses (Reason, & Hobbs, 2003). The three parts are linked, in that "without a Just Culture, you have minimal reporting; without reporting, you have no opportunities to learn and improve" (Ulrich, & Kear, p. 450). Additional characteristics of patient safety culture include nonpunitive, and emphasis on accountability (Sherwood, & Barnsteiner, 2012), which are also characteristics of Just Culture. Reason (2013) reflects on the journey in patient safety culture since the 1990's, noting that most of the successes have come not in eliminating errors, but in changing how we view errors, with more focus on the problem and less on the people.

Problem Statement

The problem being addressed in this Doctorate of Nursing Practice (DNP) quality improvement project is nurse leader responses following an AE. The impetus for addressing this problem was based on observations and practice, as well as the literature on patient safety, that reveal inconsistencies in nurse leader responses to AEs which create an environment of blaming or punitive actions toward individuals (Battard, 2017; David, 2019; Fischer, Jones, & Verran, 2018; Frankel, Leonard, & Denham, 2006; Freeman, Morrow, Cameron, & McCullough, 2016; Kaufman, & McCaughan, 2013; Petschonek, et al., 2013; Squires, Tourangeau, Laschinger, & Doran, 2010). This inconsistency in response causes problems for the organization if unit staff are not engaged in discussions or do not feel safe in discussions about an AE after it occurs. Without staff engagement around an AE, learning does not occur, and AEs may be repeated (Fischer, Jones, & Verran, 2017; Khatri, Brown, & Hicks, 2009; Mayer, Cronin, 2008). Thus, how unit staff, nurse leaders and the organization respond following an AE can either create a

punitive or blaming environment, or one that fosters learning. Nurse leaders can support a Just Culture through sharing learnings from adverse events (Khatri, Brown, & Hicks, 2009), promoting reports of patient safety incidents (Kaufman, & McCaughan, 2013), and encouraging open communication (Battard, 2017; Freeman, Morrow, Cameron, & McCullough, 2016).

Purpose of the Project

Nurse leaders need initial and ongoing education to enhance their knowledge and skills in creating a culture that is safe, responding to and being considerate of staff psychological needs, and to apply Just Culture concepts and principles in their interactions with unit staff. Nurse leaders' use of Just Culture concepts and principles in their interactions with unit staff will support their leadership practice, and staff engagement, when an AE occurs.

Therefore, the purpose of this DNP project was to address nurse leaders' perceptions of Just Culture concepts and their ability to apply the tools of Just Culture to create an environment that promotes learning after an AE occurs. Specifically, a nurse leaders' educational program was implemented at the project site to expand on and reinforce the concepts of Just Culture. The program gave nurse leaders opportunities to review Just Culture concepts and strategies and engage in interactives to help them learn and practice critical skills. The goal of this project was to help nurse leaders feel more comfortable deploying Just Culture concepts in their interactions with unit staff, and to mitigate the negative consequences of AEs. Nurse leaders' perceptions about Just Culture were assessed before and after engaging in the educational program to determine whether the educational sessions improved their understanding of how to respond to an AE using a Just Culture approach.

Significance to Nursing and Healthcare

Nurse leaders are instrumental in affecting patient safety and improving quality in health care. Creating a safe environment where open conversations can occur is necessary to promote a learning environment (Fischer, Jones, & Verran, 2017). Just Culture is one set of tools to support organizations with accountability and safety. Dekker (2007) describes that Just Culture informs the creation of a safety culture by demonstrating: "how to reconcile accountability for failure with learning from failure—with the aim to keep making progress on safety" (p. 26). Nurse leaders are in key positions to create and maintain a Just Culture (Mayer & Cronin, 2008), because they are integral in the development of an open environment that promotes communication, and in turn, supports a culture of safety (Garon, 2012).

Chapter Summary

Nurse leaders promote and improve patient safety, in their areas of responsibility, and also in healthcare organizations as a whole. When an AE occurs, nurse leaders can help support unit staff by using Just Culture to guide the conduct of investigations to uncover what happened, share learnings with unit staff, and provide emotional support to help mitigate the consequence of the AE. In the next chapter, relevant patient safety literature will be reviewed to determine the use of educational interventions as an effective way to change the perception of patient safety culture for all staff, including nurse leaders.

CHAPTER 2: REVIEW OF THE LITERATURE (ROL)

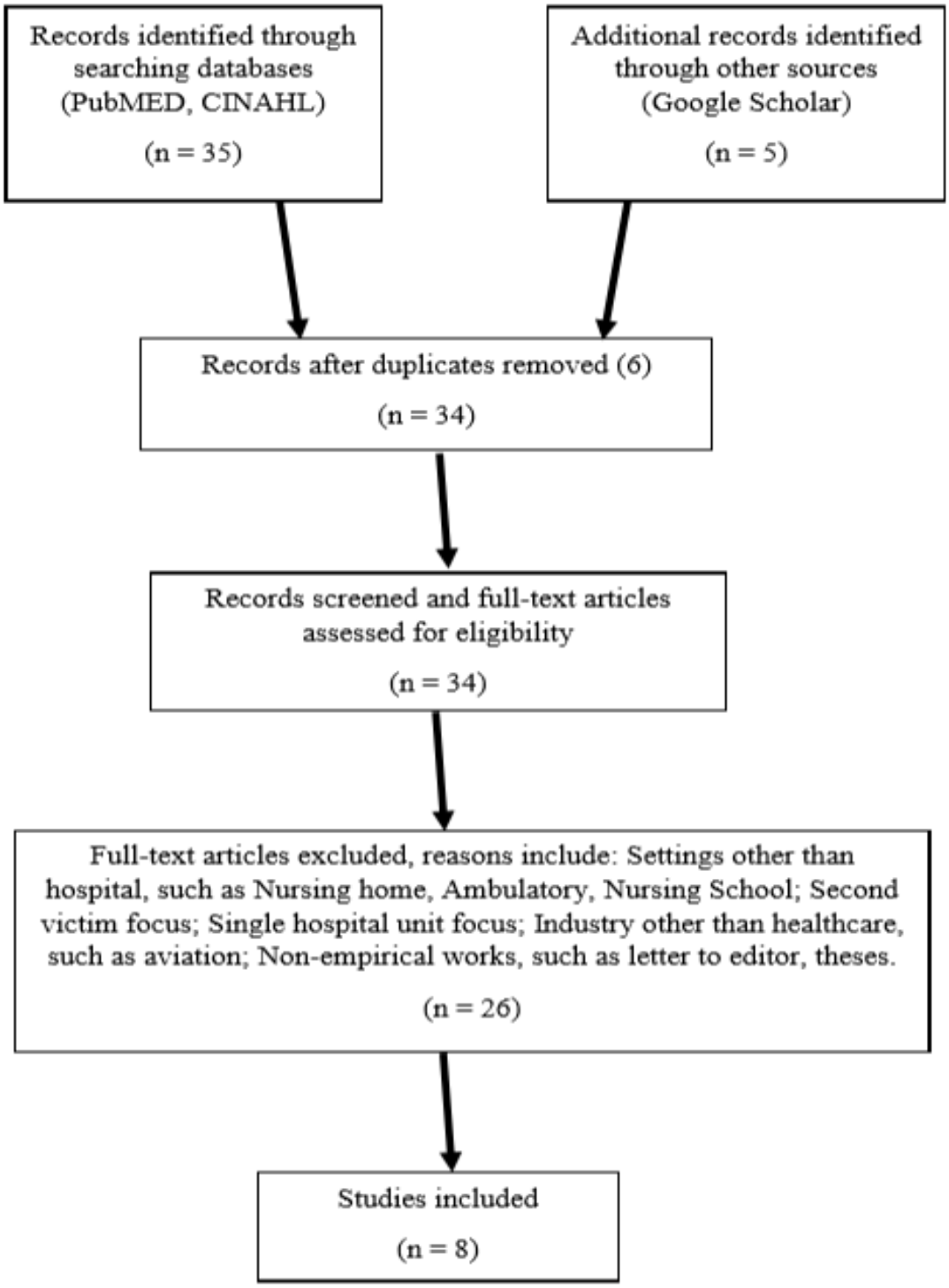
Introduction

A large body of literature exists on the broad topic of patient safety culture. In particular, there has been a focus on how to ensure patient safety, including the reporting systems for AEs, leaders' influence on the impact of patient safety, communications about AEs, organizational approaches to improve patient safety, and a variety of other topics related to patient safety and creating a patient safety culture. This chapter presents the review of literature that supported this project. In the sections that follow, a description will be provided about how the literature was searched.

The Literature Search

To gather data specific to this project, a search was conducted to identify the most relevant evidence on educational interventions used in nursing, in patient safety culture and Just Culture. A health sciences librarian was consulted to conduct this search. The search strategy included an examination of literature gathered from the following databases: PubMed, CINAHL, and Google Scholar. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses, or PRISMA, guidelines were used to guide and conduct the search (See Figure 1).

Figure 1. PRISMA



The following search terms were used, both individually and in combination: patient safety culture; nurse manager; nurse administrator; nurse leadership; models; theoretical; psychological safety; systems theory; learning from errors; Nursing; nurse and leader influence. During the search, the following MeSH terms were also used: patient; safety; ethnology; culture; nurse administrators; manager; nurse manager; nurses; nurse; leadership; nursing.

Inclusion criteria for this search included empirical research and projects that implemented educational interventions focusing on Just Culture at an organizational level. Also, the search was limited to English language publications. Although dates were not restricted, the articles retrieved were published between 2005 to 2018. The following exclusion criteria were used: all non-empirical works, including letters to the editors, editorials, student theses; interventions focused on a single clinical unit; and patient safety research or interventions conducted in non-hospital settings (e.g., ambulatory and nursing home setting).

The first search yielded 24 articles that were very broad in nature. To further develop the search results, “Just Culture” was added to the search terms. The search was also focused on “healthcare”, to provide more focus for the review. After adding “Just Culture”, and “healthcare”, the total number of articles increased to 40.

A total of 40 records were initially identified, including six duplicate records, which were removed; 34 records remained for screening. After screening the abstracts of each article, 26 records were excluded because they did not fit with the project’s purpose. This process of elimination yielded eight articles for final review (see literature matrix in Appendix A).

Results of the Literature Review

Of the eight studies identified, three were conducted in Canada, and one each was conducted in China, Saudi Arabia, Spain, Sweden, and the United States. Sample sizes for the

studies ranged from 9 to 566, depending on the study methodology, and included nurse leaders (e.g., nurse managers, clinical nurse specialists), as well as staff nurses, and physicians. The Rating System for Hierarchy of Evidence for intervention / questions, established by the American Medical Association in 2002 (see Table 2), was used to determine the level of evidence represented by each article. In this system, Level I is the strongest level of evidence (systematic review or meta-analysis), while Level VII (expert opinion) is the weakest (Melnyk & Fineout-Overholt, 2015).

Table 2. Rating System for *Hierarchy of Evidence for Intervention and Questions*

Levels of Evidence	Sources of evidence
Level I	Systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)
Level II	Well-designed RCTs
Level III	Well-designed controlled trials without randomization
Level IV	Well-designed case-control and cohort studies
Level V	Systematic reviews of descriptive and qualitative studies
Level VI	Single descriptive or qualitative studies
Level VII	Opinion of authorities and / or reports of expert committees

(Melnyk & Fineout-Overholt, 2015)

Applying this rating system to this review, there were no studies identified that were rated at Levels I, II, IV, and VII. Instead, studies were rated as follows: two studies were determined to be quasi-experimental, or evidence Level III; one study was a systematic review, or Level V; and five studies were rated as evidence Level VI, with one categorized as a descriptive study, and four as qualitative studies (Melnyk & Fineout-Overholt, 2015).

Major findings from the studies were synthesized to identify themes among the studies. Three themes emerged from the review: 1) educational initiatives for nurse leaders on the topic

of Just Culture; 2) training in leadership skills and appropriate communication such as listening and supporting suggestions for improvements and their roles in patient safety; and 3) the organizational impact of AEs and Just Culture on the individuals and organization where AEs occur. The literature in each of these areas will be discussed below.

Educational interventions for nurse leaders in just culture. Educating nurse leaders to ensure patient safety is critically important because they supervise frontline staff and oversee care delivery. Providing education on Just Culture concepts and then repeating the education periodically, is especially important to introduce, emphasize, and reinforce Just Culture concepts and principles over time, and then to support and maintain the culture once created. Studies of leaders, both in nursing and medicine, report this training as being instrumental in affecting patient safety culture through leaders' abilities to foster or impede the development of the safety culture (Ginsburg, Norton, Casebeer, & Lewis, 2005; Mira et al., 2017; Ullström, Sachs, Hansson, Øvretveit, & Brommels, 2014). Focusing on ways to strengthen the relationship between staff and leaders was instrumental in supporting a culture of safety in hospitals (Squires, Tourangeau, Laschinger, & Doran, 2010).

Three studies of educational interventions on Just Culture developed for nurse leaders were identified in the literature review. In one Level III quasi-experimental study (Ginsburg, Norton, Casebeer, & Lewis, 2005), an educational intervention and leadership support for nurses in leadership roles (e.g., nurse managers, nurse educators, clinical nurse specialists) was implemented to improve perceptions of the patient safety culture. The educational intervention consisted of two different patient safety workshops: Workshop one discussed evidence from literature and theories on AEs, tools for preventing errors, and for learning from AEs; Workshop two focused on teamwork, leadership in improving safety, and organizational data used for

improvement. It was reported to be effective in providing a model and evidence for improving nurse leaders' perceptions of patient safety culture. Participants, nurses in clinical leadership roles, completed self-report questionnaires measuring patient safety culture and leadership for improvement before and after the intervention. When data before and after implementation of the educational intervention were compared, there was a significant increase in the value of safety at the organizational and departmental levels ($p < 0.001$), but no significant change in fear of negative repercussions and perceived state of safety (Ginsburg, Norton, Casebeer, & Lewis, 2005). However, the interaction between "leadership for improvement" and the educational intervention explained a significant amount of variance ($p < 0.001$) in leaders' fear of negative repercussions (Ginsburg, Norton, Casebeer, & Lewis, 2005). The *leadership for improvement* part of the questionnaire assessed how respondents felt senior leaders used hospital data, such as performance data, and how they used the data for improvement (Ginsburg, Norton, Casebeer, & Lewis, 2005). Results suggested that the combination of the educational intervention and leadership support is likely needed to improve the perception of culture of safety (Ginsburg, Norton, Casebeer, & Lewis, 2005).

An educational initiative aimed at evaluating the impact of a safety culture training program and perceptions of safety culture for nurse leaders was introduced to nurse managers in hospitals in China (Xie et al, 2017). This Level III quasi-experimental study implemented a safety culture training program, consisting of five sessions constituting a total of 76 hours, that included a patient safety module from the Institute of Healthcare Improvement, as well as specific content on safety culture, reporting and processing AEs, risk assessment and managing adverse events, using good communication skills, strategies for managing clinical practice, and providing effective feedback (Xie et al, 2017). Post implementation, nurse managers reported

using more non-punitive response to staff errors, and AEs (patient falls and HAPIs) decreased significantly ($p < 0.05$) (Xie et al, 2017).

In another study, a Level VI qualitative study of educational interventions and their impact on patient safety culture, interviews of nurse managers were completed to evaluate competencies (Freeman, Morrow, Cameron & McCullough, 2016). This intervention consisted of gathering information through interviews of nurse managers about their perceptions about developing the personal competencies to effectively implement Just Culture, thus guiding the design of the Just Culture education program (Freeman, Morrow, Cameron & McCullough, 2016). Interviews with nurse managers showed that opportunities to use their knowledge in a practice environment is necessary to become competent with the skills of Just Culture, especially for investigating cases (Freeman, Morrow, Cameron & McCullough, 2016). The results from the interviews were consolidated into recommendations for the educational program for implementation of Just Culture. Freeman, Morrow, Cameron, and McCullough (2016) concluded that nurse leaders needed further development in the skills of conducting AE investigations, and using facilitative language, so as to support coworkers instead of blame.

Taken together, these studies of educational interventions provided to nurse leaders on Just Culture indicate that there is value in educating nurse leaders, shown through the improvements in responses by nurse leaders and increased knowledge of Just Culture concepts. The findings of these studies inform this project by influencing the design of an educational program for nurse leaders, as well as the pre-post design for the surveys.

Leadership and communication skills related to patient safety. Three studies were found regarding leadership and communication that will be discussed. The first was a Level VI descriptive study conducted by Squires, Tourangeau, Laschinger, and Doran (2010), who

surveyed nurses to evaluate their perceptions of factors impacting safety outcomes in hospitals in Ontario, to test and refine a hypothesized model. Surveys examined staff nurse perceptions of the following: relationship between staff nurses and their immediate nurse leader; resonant leadership style; interactional justice and nurse leader behavior; work environment; and patient safety and quality outcomes. The results of their analysis showed that effect sizes were large between resonant leadership and leader-nurse relationship (0.52), nurse leader-nurse relationship and safety climate (0.53), work environment and safety climate (0.66) and work environment and emotional exhaustion (-0.51), indicating a good fit with the model. The model demonstrates the interaction between manager span of control, years with manager, resonant leadership, interactional justice, and number of years worked with leader—nurse relationship, which in turn interacts with safety climate and the work environment (Squires, Tourangeau, Laschinger, & Doran, 2010). Resonant leadership is described as high emotional intelligence, being in tune with emotions and able to properly use empathy and emotions to build relationships (Squires, Tourangeau, Laschinger, & Doran, 2010). There were medium effects, meaning weaker relationship, between interactional justice and leader-nurse relationship, as well as combined with work environment (0.46), and between safety climate and intent to leave (-0.34). Survey results and the model point to the importance of the relationships between nurse leaders and nurses, and how they support high quality and safe nurse environments (Squires, Tourangeau, Laschinger, & Doran, 2010).

Another Level VI qualitative study examined staff nurse perceptions about factors that impact patient safety, with a focus on organizational and information technology (IT) factors (Mwachofi, Watson, & Al-Omar, 2011). Data were collected through questionnaires administered to nurses to assess their perceptions of patient safety and how socioeconomic and

organizational factors impact patient safety. Nurses reported that if they shared a safety suggestion that was taken seriously, or addressed by a nurse manager, they were more likely to perceive better patient safety in their hospital (Mwachofi, Watson, & Al-Omar, 2011). Nurses who had "seen others make errors that had the potential to harm patients" (Error-Seen) reported that they were less likely to have positive perceptions of safety about their departments or hospital (Mwachofi, Watson, & Al-Omar, 2011, p. 278). Socioeconomic factors were not found to influence nurses' perceptions of patient safety. The authors concluded that communication skills were important in improving patient safety culture, and may encourage quality improvement, and problem-solving (Mwachofi, Watson, & Al-Omar, 2011).

Gathering information through formal conversations, interviews and focus groups, helps to identify recommendations for organizational improvements, and particularly patient safety improvements, as well as specific actions needed by leaders to support patient safety and organizational health. In a Level VI qualitative study, a Delphi technique was used to achieve consensus regarding factors influencing the relationship between transformational leadership and safety culture (Fischer, Jones, & Verran, 2018). A diverse panel of experts in leadership and patient safety represented various practice areas to provide adequate feedback for the questionnaires and the Delphi technique (Fischer, Jones, & Verran, 2018). In discussion with the panel of experts, the importance of leadership support, at all levels including executive, for staff was identified as an element in creating a safety culture to safeguard mental and physical health (Fischer, Jones, & Verran, 2018). The authors recommended that nurse leaders invest in Just Culture processes, which support non-punitive responses to errors and reinforce psychological safety, leading to a strong culture of safety (Fischer, Jones, & Verran, 2018).

These studies of nurse leadership and communication skills specific to patient safety indicate that nurse leader communication and the relationship between nurses and their immediate nurse leader is important, and helps support high quality care and patient safety, as well as supporting Just Culture through investing in using non-punitive responses. The findings of these studies inform this project by including focus on nurse leader communications in the educational program, seen through role play, as well as the case scenario.

Organizational and individual impact of adverse events. Two studies were reviewed that examined how AEs affect organizations and individuals who work in them. For example, if an AE occurs in a hospital, the patient who experienced the AE is the first victim, but the employee who was involved in the AE is potentially the second victim. This phenomenon, called *second victim,* is either helped or hindered depending on the safety culture of the patient care area.

In a Level VI qualitative study of healthcare employees, physicians, nurses, and allied healthcare professionals, interviews were conducted one to three years following an AE to determine experiences following an AE. Healthcare professionals who had experienced an AE reported that the impact of the event affected them in different ways. First, they reported emotional reactions such as shock and disbelief about the AE. Second, they described the impact on their professional performance such as feeling insecure in their jobs and doubting their own professional judgment; and the duration of the impact ranging from a few months to one year or more on the affected workers (Ullström, Sachs, Hansson, Øvretveit, & Brommels, 2014). Moreover, many workers reported reliving the event, and felt self-doubt and additional worry about being at work (Ullström, Sachs, Hansson, Øvretveit, & Brommels, 2014).

In a Level V study, focus group interviews were conducted with nurses and other healthcare professionals, who had experience in quality and patient safety in the Spanish National Health System, to gather information about their perceptions of patient safety. Results of the focus groups were synthesized, and categorized into four groups: preventing the aftermath of an AE; patients as first victims of AEs; professionals as second victims of AEs (i.e., healthcare workers reported feeling the impact of the AE); and institutions as third victims of AEs, [healthcare organizations have impact from the AE, such as public loss of trust, reputation damage] (Mira et al., 2017). Recommendations from this study were evaluated by healthcare managers. Findings revealed the importance of the healthcare manager in taking a proactive role in applying evidence-based recommendations for healthcare workers, leaders and those at the bedside, for improving the patient safety culture (Mira et al., 2017). Recommendations from this study included preparing a plan for actions in the case of an AE; asking the right questions in an AE investigation; appropriately involving patients in an AE investigation; and a variety of recommendations to support the second victim and third victim (Mira et al., 2017).

The studies examining the effects of AEs on organizations and the individuals who work in them indicate that it is important for leaders to be aware of the impact on individuals involved with an AE, and to be prepared with a plan for responding to an AE. The findings of these studies inform this project by including event investigation information in the educational program, as well as awareness for how AEs may impact the individuals involved with an AE, so they can offer support.

Summary of the Literature

These studies examined in this literature review focused on several important areas. First, the studies indicate that leaders have an important impact on the culture of safety, including how

nurse leaders (managers, educators, and clinical nurse specialists) affect patient safety culture and the impact of AE on individuals and staff (i.e., the second victim phenomenon) (Ginsburg, Norton, Casebeer, & Lewis, 2005; Ullström, Sachs, Hansson, Øvretveit, & Brommels, 2014). Specifically, strong nurse leader—nurse relationships support high quality and safe patient care, as well as Just Culture through open communication and encouragement to report safety events. Second, leaders' and organizational responses to errors (Fischer, Jones, & Verran, 2018; Xie et al., 2017) are important because nurse leaders can support Just Culture by being prepared with a plan for investigating AEs, and responding appropriately. Across all studies, recommendations for organizations were provided, including promoting practices that improve patient safety culture such as creating safe spaces for open dialogue, and creating a plan for investigating AEs, (Fischer, Jones, & Verran, 2018; Ginsburg, Norton, Casebeer, & Lewis, 2005; Mira et al, 2017). Additionally, nurse manager perceptions about competencies related to Just Culture implementation indicated that leaders' feeling uncomfortable with event investigations and follow-up conversations with staff could be amended through education and practice, or role play. These strategies effectively improved the confidence and competencies of leaders (Freeman, Morrow, Cameron, & McCullough, 2016; Mira et al, 2017). Finally, staff perceptions about patient safety related to information technology, demographic and system factors and relationships among leadership and other factors impacted the safety outcomes of patients (Mwachofi, Watson, & Al-Omar, 2011; Squires, Tourangeau, Laschinger, & Doran, 2010).

The studies reviewed here suggest that educational initiatives focused on patient safety culture concepts, as well as providing opportunities for nurse leaders to practice using the concepts, result in improved perceptions of the patient safety culture and value of safety locally and organizationally (Freeman, Morrow, Cameron & McCullough, 2016; Ginsburg, Norton,

Casebeer, & Lewis, 2005) and resulted in a significant decrease in AEs at one healthcare facility (Xie, et al, 2017).

Leaders are better prepared to respond to AEs when they have a plan for response such as structured and consistent investigation, as well as supporting staff who experienced the AE, especially if staff are suffering from the second victim phenomenon (Fischer, Jones, & Verran, 2018; Mira et al., 2017; Ullström, Sachs, Hansson, Øvretveit, & Brommels, 2014). Maintaining patient safety culture and Just Culture is supported through leadership and communication skills, such as supportive leader-nurse relationships, promoting an open environment where unit staff feel comfortable to share ideas to leaders, and problem-solving in relation to improving safety culture and patient safety outcomes (Mwachofi, Watson, & Al-Omar, 2011; Squires, Tourangeau, Laschinger, and Doran (2010);).

Chapter Summary

This chapter presented a focused review of the relevant literature on patient safety culture, highlighting educational initiatives and their impact, leadership and communication, and the impact of AEs on individuals (both patients and staff) and organizations. In addition to patient safety culture, the literature focused on Just Culture, which is the model used to guide this project. The next chapter will describe the Just Culture model in detail.

CHAPTER 3: CONCEPTUAL MODEL

Introduction

The previous chapters have introduced the problem, the purpose of the project, and described the review of the literature. The focus is the need to develop nurse leaders by impacting their perceptions of Just Culture, and increasing their knowledge and skills of Just Culture, so they in return can support their staff and the organization in the use of Just Culture concepts and tools.

Just Culture is a model that supports leader accountability, focusing on behaviors and system design, as opposed to blaming people (Marx, 2019a). Just Culture was built from the desire to respond to errors in more appropriate ways, moving away from punishing people for making mistakes, while still supporting accountability (Marx, 2001). Just Culture benefits organizations through creating a safe environment for reporting errors, or an "account of failure", which in turn does the following in organizations: "satisfy demands for accountability" and "contribute to learning and improvement" (Dekker, 2007, p. 24). Boysen (2013) reminds that organizations have a duty to employees and patients regarding the quality of healthcare, and that employees are held accountable for their choices. Just Culture is a model that helps organizations support an environment for honest reporting, and appropriate accountability balanced with learning, because the focus has shifted from "errors and outcomes to system design and management of the behavioral choices of all employees" (Boysen, 2013, p. 400).

In organizations, Just Culture assigns expectations to all individuals, regardless of their role in the organization. The first duty is related to values, which emphasizes avoiding causing

unjustifiable risk or harm (Marx, 2019a). The second duty is related to accepted practices in the organization, or how things are done. This duty is specific to following a procedure (Marx, 2019a). In healthcare settings, this duty to follow a procedural rule is especially common, as so often procedures or protocols are in place. The third duty is related to what is done in the organization, and emphasizes the production of outcomes (Marx, 2019a). An example of the duty to produce an outcome is attendance, the outcome of arriving to work on time.

Just Culture Concepts and Behaviors

The Just Culture model includes four concepts and five behaviors that can be identified in investigations of breaches of duties. While Just Culture identifies five behaviors (human error, at-risk behavior, reckless behavior, knowingly causing harm, and purposely causing harm), the first three behaviors are the focus for discussions regarding patient safety, and relevant to this DNP project. Table 3 describes the three behaviors identified in event investigations.

Table 3. Definitions of Just Culture Behavior Categories

Behavior	**Definition**	**Example:**
Human Error	"[Individual] should have done other than what they did" (Marx, 2001, p.8); unintentional; mistakes, slips, lapses (Morris, 2011)	"The caregiver makes or participates in an error while working appropriately an in the patients' best interests" (Boysen, 2013, p.404). Example: Clinician intends to remove one medication from the medication dispensing system but removes another instead.
At-risk behavior	"Failure to exercise expected care. [Individual] should have been aware of substantial and unjustifiable risk" (Marx, 2001, p.8); "a conscious drift from safe behavior" (Boysen, 2013, p.404); "failure to exercise skill, care, and learning expected of a prudent healthcare provider" (Morris, 2011, p. 121)	"The caregiver made a potentially unsafe choice. Faulty or self-serving decision-making may be evident" (Boysen, 2013, p.404). Example: One clinician fails to notify attending provider of a critical lab value.
Reckless conduct	"Conscious disregard of substantial and unjustifiable risk" (Marx, 2001, p.8); "conscious of conduct and risk" (Boysen, 2013, p.404)	"The caregiver knowingly violated a rule and /or made a dangerous or unsafe choice. The decision appears to have been made with little or no concern about risk" (Boysen, 2013, p.404). Example: Clinician reports to work under the influence.

The first of these behaviors is *human error*. Marx (2015) illustrates the first Just Culture concept in the following statement: “We are inescapably fallible human beings. No matter how we are pieced together as a collection of human beings, we will inevitably produce undesired results” (p. 297). Marx defines human error as “unintended conduct”, or when actual behaviors are different than intended behaviors (Marx, 2019a, p. 17). Because of the imperfect nature of humans, errors, slips, or lapses occur. Slips are usually not intentional, whereas lapses may indicate the individual thinks the action will not lead to harm (Reason, 2000). All of these—errors, slips, and lapses -- reflect “human error” in Just Culture, and the recommended response to human error is to accept, or console the individual involved in the error (Marx, 2019a). Marx updated *console* to “accept the error”, which is described as “to refrain from any sanction” and to focus on the system and behavior choices that brought the individual to this error (Marx, 2019b, p. 243).

In spite of a well-designed system, the second Just Culture concept is that employees have a “propensity to drift” (Marx, 2015, p. 301). A propensity to drift means that individuals may fail to do the “right thing” because they drift into engaging in *at-risk behaviors*, including taking shortcuts to complete tasks or work activities (Marx, 2009). Marx explains that as humans, we “are always looking for quicker, easier ways to navigate through the many duties we daily face” (Marx, 2009, p. 94). This type of behavior is identified as “at-risk behavior” in Just Culture, because the individual either does not recognize the risk, or mistakenly believes it is justified (Marx, 2019b, p. 241). When an error occurs, the recommended response is to coach the individual that includes “a discussion about the risks associated with the behavior” (Marx, 2019b, p. 244).

The third concept is that employee behaviors that do not match with organizational values and safety have to be identified and the perpetrator held accountable (Marx, 2015, p. 302). When behaviors move away from the organization's values, and especially in light of a "willingness to accept an unjustifiable risk" on the part of the perpetrator, this is identified as *reckless behavior* in Just Culture (Marx, 2019b, p. 241). The recommended response is generally to punish, or sanction, the individual (Marx, 2019a). Punish is described as "disciplinary action, civil or criminal charges" (Boysen, 2013, p. 405). Marx updated punish to "sanction reckless, knowledge, and purpose" which is described as applying artificial danger, such as the criminal penalties for violating a patient's privacy (Marx, 2019b, p. 244).

A critical component in the process of ensuring Just Culture is the fourth concept, that leaders support the process at all levels of the organization, by being role models, and delivering feedback to employees (Marx, 2015, p. 307). Leaders also help with proper evaluation of systems, investigations of events, and responses to individuals (Marx, 2019a). Actions following the AE, or breach of duty, are important in maintaining Just Culture.

The fourth concept is one that guides this DNP project, focusing on the importance of leadership support for Just Culture. Through participation in the education program, formal nurse leaders, defined as Clinical Nurse Managers and Clinical Nurse IV-Team Leaders, will be better equipped and prepared to support Just Culture in the organization.

Event Investigation and the Just Culture Algorithm©

The Just Culture model guides health care leaders to investigate the AE to enhance understanding, categorize behaviors, and apply appropriate actions following the AE. Morris (2011) highlights that the investigation is one central piece that separates a traditional disciplinary system from a Just Culture. There are questions to guide the investigation and

analysis: “What happened? What normally happens? and What should have happened?” (Freeman, Morrow, Cameron & McCullough, 2016, p. 43). It is important for the leaders who will be conducting the investigations to learn the Just Culture concepts initially, but also to have ongoing practice, using scenarios (Freeman, Morrow, Cameron & McCullough, 2016). Taking time to identify the root cause is often missed in investigations, therefore understanding the root cause of an error or AE is vital in order to help prevent future events is critical (Morris, 2011).

Using an algorithm, or decision tree, supports leaders in making decisions on how to hold staff accountable, as well as remain consistent (Morris, 2011). The Just Culture Algorithm© (Outcome Engenuity, 2017) was designed by David Marx, and is used to guide the conduct of leader investigations following an AE. (See Figure 2.) Through a series of questions, the leader is guided to the behavior category for this event, and therefore the response to accept or console for human error, coach for at-risk behavior, or punish for reckless behavior (Marx, 2019a). The leader needs to know how to evaluate the behavior that occurred and the potential harm that was inflicted to properly answer the algorithm questions. This investigation is important because it helps avoid assumptions about what occurred, and helps the leader better understand the event as well as understand how to respond to the event.

The first part of the Just Culture Algorithm© refers to the “higher” duty, or the values duty, “The duty to avoid causing unjustifiable risk or harm” (Marx, 2019a). This duty refers to actions that are described as “do not do” (Marx, 2019a, p. 49). There are multiple examples, such as theft, killing, or arson. There is consideration for justification of the harm, through asking this question in the algorithm “was the harm justified as the lesser of two evils?” (Marx, 2019a, p. 62). For example, a police officer shoots one person, to help another. There is also consideration

for disregard of the risk, helping the leader to identify if this was reckless behavior, or at-risk behavior.

The second part of the Just Culture Algorithm© refers to "The duty to follow a procedural rule" (Marx, 2019). This duty refers to actions that are described as "how to" (Marx, 2019a, p. 49). Some examples include using a checklist for a specific procedure, or a detailed stepwise process, such as surgical counts of sponges. There is consideration if a social benefit outweighs the risk of the breach of duty, through use of the algorithm (Marx, 2019a). For example, omitting hand hygiene before entering a patient room, to prevent a patient from falling. There is consideration for the individual having mistakenly believed that the action was justified, helping the leader to identify if this was reckless behavior, or at-risk behavior.

The third part of the Just Culture Algorithm© refers to "The duty to produce an outcome" (Marx, 2019a). This duty refers to actions that are described as "what to do" (Marx, 2019a, p. 49). An example of this duty includes time and attendance. Outcomes feed into the body of work for the individual, and so that big picture of the body of work is included in the investigation (Marx, 2015). There is again consideration if a social benefit outweighs the risk of the breach of duty, through use of the algorithm (Marx, 2019a). For example, an employee was late to work because she encountered an accident on the way, and stopped to help, since she is a healthcare provider.

Occasionally, behaviors occur more than once, resulting in repetitive human errors or repetitive at-risk behaviors. The Just Culture Algorithm© has a series of questions for these situations as well. Personal performance-shaping factors, as well as system performance-shaping factors are items to be assessed (Mar, 2019a, p. 70).

The project's educational program also emphasizes use of the Just Culture Algorithm© to ensure leaders remain consistent in their responses to AEs and behaviors. Case scenarios and role play during the educational program will help illustrate and provide reinforcement of how to use the algorithm.

Chapter Summary

The model of Just Culture was developed to support organizations in appropriate responses to employee actions, as well as promote justice. In healthcare specifically, it was noted that punishment occurs when people make mistakes (Marx, 2001), which is not in line with a Just Culture or promoting a culture of safety in health care.

CHAPTER 4: METHODS

Introduction

This DNP project used a QI approach to evaluate nurse leaders' perceptions of Just Culture on clinical units before and after the implementation of an educational intervention. The Consolidated Framework for Implementation Research (CFIR) originally was developed to implement evidence-based research (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009). However, subsequent studies have demonstrated its capacity to be used in quality improvement studies to frame the study and implement strategies. Because of the broad detail in the CFIR domains, it is recommended for use in implementations that impact an entire organization, and was selected to guide this project implementation (Frederiksson, Eldh, Vengburg, Dahlström, Halford, Wallin, & Winblad, 2014; Rojas Smith, Damschroder, Lewis, Weiner, 2015). Because CFIR is such a detailed framework, it may not be appropriate for some QI projects, especially for a small setting. Although this project targeted one portion of the organizational workforce (nurse leaders), the focus of Just Culture is applicable to the entire organization.

This framework promoted project planning and design by guiding a thorough analysis of the following domains prior to project implementation: intervention characteristics; outer setting; inner setting; characteristics of the individuals; and implementation process (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009).

The intervention characteristics reflect the strength and quality of evidence of the intervention, the adaptability of the intervention to the organization, and the complexity of the

intervention (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009). According to CFIR, the implementation should be compatible with the values and abilities of the organization. Values of high quality and safety are in line with both the organizational drive and individuals who are motivated for this change.

The setting includes both outer and inner domains. The outer setting domain reflects external pressures, including policies, government regulations, and other structures that will promote or prohibit implementation or adaptation. (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009). The inner setting domain has the most detail, including a description of the organizational setting where the intervention will be implemented, its age and size, the norms and values of the organization, as well as the networks and lines of communication, and the capacity and readiness for change. (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009). For this DNP project, the outer and inner settings will be discussed together.

The characteristics of individuals reflected an analysis of the groups of individuals involved in the project implementation, mainly focusing on the ability of individuals and groups to change and lead change. Assessment details included an evaluation of individuals' knowledge of the intervention; their beliefs regarding their own capability to carry out the implementation; their stage of change for the individual related to application of the intervention; their beliefs about and commitment to the organization; and any other individual characteristics (e.g., values, intellect, and skills) that might influence the implementation and sustainability of the intervention. (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009).

Finally, the implementation process referred to specific engagement from key stakeholders in the implementation and specific planning for the execution, reflection and evaluation of the implementation. Both formal and informal leaders were considered as well as

other change agents, even if they were external to the organization. (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009).

Each of these CFIR domains will be discussed with respect to this implementation project. These domains interact to impact the effectiveness of project implementation (Damschroder, Aron, Keith, Kirsh, Alexander, & Lowry, 2009).

Intervention Characteristics

The intervention implemented in this project was an educational program for nurse leaders at the project site. The educational program included specific implementation processes as well as a survey to evaluate understanding of program contents. Details on the implementation processes are discussed in a subsequent section.

Setting (Outer and Inner)

The setting for this QI project was a private, not-for-profit tertiary care hospital in the southeastern United States (US). The project site was one of over ten affiliate hospitals in a large academic health system. Established 125 years ago, today the project site had over 400 inpatient beds, an acute care hospital, five wellness centers across the county, two skilled nursing facilities, and active construction for another hospital, as well as an ambulatory cancer center.

The main project site campus had inpatient and short-stay units in the Women's Hospital, Main Hospital, and Heart & Vascular Hospital, for a total of 20 inpatient and short-stay units. There were five Nursing Directors, representing the inpatient and short-stay units and the emergency department. Patient care areas included medical units, surgical units, intermediate care units, critical care units, and women's center units. All Nursing Directors met with the CNO biweekly, and appropriate information was shared with the Managers, and then with nursing unit staff through the Clinical Nurse Manager. Each of the 20 units had a Clinical Nurse Manager,

and a varying number of Clinical Nurse IV(CNIV)-Team Leaders, depending on the total number of unit staff.

This facility was designated as a Patient Safety Organization (PSO) by the state-level affiliate of the American Healthcare Association. The PSO was established in this state to provide a safe environment for healthcare providers to come together to discuss and learn from patient safety events (AHRQ, nd). Designation as a PSO focuses effort towards promoting a Patient Safety Culture and provides a network to other organizations for collaborative learning.

The project site promoted collaborative learning among its leaders. There was a strong desire by the project site leaders to become a High Reliability Organization (HRO). The Agency for Healthcare Research and Quality (AHRQ) described high reliability organizations as those that manage complex environments without incurring serious accidents or catastrophic failures (AHRQ, 2019b). Improving Just Culture was one aspect to achieving this goal. HROs share five principles: preoccupation with failure, reluctance to simplify, sensitivity to operations, commitment to resilience, and deference to expertise (Agency for Health Research and Quality, 2019b; Chassin, & Loeb, 2013). Organizations that demonstrate high reliability and strong safety cultures include leadership engagement at all levels, as well as employee engagement to act on suggested changes to enhance safety, and maintain fair environments (Sherwood, & Barnsteiner, 2012).

Benchmarking for metrics was available through a multitude of agencies, depending on the metrics and patient population that is being supported. Centers for Medicare and Medicaid Services (CMS) and The Joint Commission both provide guidance for regulatory standards, as well as benchmarking among accredited organizations. Local and national patient safety organizations supported improvement in Just Culture, and therefore supported this intervention.

In looking at networks and communication at the project site, information was shared both formally and informally. Communication was shared organizationally twice a week with updates using such strategies as a *Coworker Blast*, where marketing highlights important information, and sends this coworker newsletter to all project site coworkers. News was shared with leaders, Manager level and up, each Monday via email in the leadership email, and as needed on emails to the Managers, Directors and Executive Leaders. Each unit had their own individual style and process for information sharing. For example, most units use email, and some units used huddles, bulletin boards, and websites to communicate information among staff.

Organizational goals and strategies at the study site are communicated through the organization's chain of command: Executive leaders to Directors, to Managers, and to front-line staff. Updates of goals are communicated through the project site intranet, as well as in division staff meetings. If goals were met, celebrations occur. If goals were not met, adjustments were made, and specific actions were taken to meet a goal. These adjustments have been made to achieve patient experience goals, financial goals, and other organizational metrics, such as MyChart enrollment, the patient portal of the electronic health record.

The project site received Magnet Recognition Program® designation by the American Nurses Credentialing Center (ANCC) in 2006, and since that time has been re-designated twice, representing the recognition of excellence in nursing care (ANCC, nd). The project site was in the process of preparing an application for its fourth designation. The project site also received recognition for high quality and patient safety. Among these recognitions were 4-star and 5-star designations for high quality care from the Centers for Medicare and Medicaid Services (CMS), and a Leapfrog A grade since 2012, which is a safety grade from 27 measures of public hospital safety data (Eanes, 2019; The Leapfrog Group, 2019). To maintain the designations that have

been achieved, such as Magnet, CMS 5-star, and Leapfrog A Grade, and the high marks for patient safety and quality, there was internal pressure from these external sources. These recognitions reflect the will and desire of organizational leaders to continuously engage in quality improvement initiatives.

Benchmarking that reflected organizational leaders' commitment to patient safety was available through the Agency for Healthcare Research and Quality (AHRQ), and its Patient Safety Culture survey (AHRQ, 2019a), known as the Hospital Survey on Patient Safety Culture (HSPSC). According to the Hospital Survey on Patient Safety Culture 2018 User Database Report, the twelve domains of the Culture of Safety survey include: Teamwork within units; Supervisor / Manager expectations and actions promoting patient safety; Organizational learning-continuous improvement; Management support for patient safety; feedback and communication about error; frequency of events reported; Overall perceptions of patient safety; Communication openness; Teamwork across units; Staffing; Handoffs and transitions; Nonpunitive response to error (Famolaro, et al., 2018). Participants also had an opportunity to assign a "patient safety grade" to their work area, rating as Excellent (A), Very Good (B), Acceptable (C), Poor (D) or Failing (F) (Famolaro, et al., 2018, p. 28).

This hospital-wide survey was administered every two years to gather data from all clinical staff (frontline unit staff as well as leaders) on all units about their perceptions regarding safety in the hospital. Survey responses from staff across the hospital to a routine survey of patient culture of safety revealed ongoing problems.

The hospital has administered the HSPSC four times, with the most recent administration in February 2018. Results provided important insights about unit staff perceptions of patient safety, especially with regard to feedback about AEs, non-punitive responses to errors when they

occur, and patient handoffs (L. Harmon, personal communication, November, 9, 2018). In its most recent survey, the site organization scored below the national benchmark, 55% versus 45% for the national average, in responses for staffs' perception about mistakes being held against them (L. Harmon, personal communication, November 9, 2018). For this question, lower percent is better, indicating a lower number of staff agreed that their mistakes are held against them. Also, the February 2018 survey administration yielded a very low response rate of only 13.5%, (L. Harmon, personal communication, November, 9, 2018). The results indicated that staff agreed that their mistakes are held against them, and the level of agreement continued to increase, instead of decrease. Table 4 provides an overview of survey response rates and trends for overall patient safety grades and non-punitive response to human error ("Staff worry their mistakes are held against them").

Table 4. HSPSC Responses, Safety Grades and Non-Punitive Response to Human Error

	Feb 2012	Sept 2014	Oct 2016	Feb 2018
Responses (*n*)	1408	621	222*	879
Percent total responses received out of total distributed	26.6%	11.1%	3.7%*	13.5%
Overall Patient Safety Grade (Percent Excellent)	37%	31%	44%*	45%
Non-punitive response to human error	42%	43%	55%*	55%

(L. Harmon, personal communication, November, 9, 2018) *suburban sites excluded

The low response rate was attributed to the timing of the survey administration coinciding with high patient census or a lack of prioritization of safety. Interestingly, staff perceptions of blame have increased over time and may reflect a culture of blame versus a culture that thoughtfully addresses the needs of staff involved and promotes learning.

The climate for change and the acceptance of new projects implemented at the project site was evaluated by the Performance Improvement department. This department had responsibility for supporting performance improvement efforts throughout the hospital, and the monitoring of the metrics associated with those projects. However, in healthcare organizations, like any organization, there can be tensions due to the ongoing pressures of change from internal and external sources. This pressure can be felt by organizational leaders and front-line staff alike.

Organizational culture. Culture is an important part of the inner setting that was vital to project implementation. An organization's culture represented a combination of many subcultures, as well as the organization's values, norms, attitudes, both social and professional systems and structures (Sherwood, & Barnsteiner, 2012). Organizational culture is often described as *the way we work.*

At the project site, there were many aspects that impacted the culture, including Carolina Care®, a growing Just Culture, Zero Harm initiative, a culture of accountability, and a culture of safety. Carolina Care was the framework for caring behaviors with patients, based on Swanson's Theory of Caring (Swanson, 1991; Tonges, & Ray, 2011). This theory was used to describe caring processes (maintaining belief, knowing, being with, doing for, and enabling) (Swanson, 1991), that are linked with caring behaviors for healthcare workers (moment of caring, hourly rounds, no passing zone, words and ways that work, and blameless apology) (Tonges, & Ray, 2011).

Just Culture training has been provided to all the project site leaders, including nurse leaders, through a series of online modules. A formal, hospital-wide in-person leader training was also provided, which consisted of a one-day program led by David Marx, the author of much of the Just Culture literature, and CEO of *Outcome Engenuity*, an entity that provides training to

organizations on Just Culture and other related concepts (Outcome Engenuity, 2019). The initial Just Culture training at the project site was provided to existing leaders at the project site in 2012, and since that time, new leaders hired into or promoted in the organization complete a *Just Culture for Healthcare Managers* online module, available through the project site learning management system, generally completed during the initial 90-days of employment. The project site Human Resources department partners with leaders by giving them, usually when hired, a Just Culture Algorithm©. As previously described, this algorithm was developed by David Marx and is used as a tool to assist in AE investigations. Appendix B presents the Just Culture Algorithm© (Outcome Engenuity, 2017), and that permission was granted to use the Just Culture Algorithm© (personal communication, D. Marx, July 8, 2019).

The project site also supported two employees, nurses, to obtain additional training that would allow them to become certified and teach others in the principles and practices of Just Culture. These two Just Culture-certified nurses periodically, once every few years, provide refresher information about Just Culture for organizational leaders. In these one-hour refresher courses, Just Culture concepts were reviewed at a high level, along with the Just Culture Algorithm©, and the application of the algorithm in scenarios familiar to managers. During this course, participants had an opportunity to share learning needs regarding Just Culture so that future education and training can be provided.

The Project Leader (DNP student) collaborated with the two certified Just Culture trainers at the project site to develop training sessions. The Project Lead has also obtained Just Culture certification to better master specific principles and practices of Just Culture. Evidence-based resources from the literature, including the Just Culture Algorithm© (Outcome Engenuity, 2017); Just Culture literature; and materials from the Just Culture Certification Course were used

to develop lecture content and reflection exercises, including role play and case studies. The educational sessions designed were consistent with official training materials from the Just Culture training program with David Marx. Information presented included relatable examples, that cross multiple nursing unit settings, that participants could use to mold to their own settings and apply to their own needs.

The most recent Just Culture refresher training, prior to the intervention, was offered to nurse managers at the project site on May 7, 2019. At that time, participants verbally shared specific needs regarding additional learning opportunities; this information was be used to develop the educational intervention for this DNP project.

The Zero Harm initiative at the project site was intended to help the organization move toward the elimination of patient harm that pertains to an episode of care. The Zero Harm initiative was represented in literature as a connection to high reliability, and the way to address quality and safety problems (The Joint Commission, 2018). This initiative involved a weekly meeting where patient care leaders and unit representatives present a summary of the investigation of AEs in which a patient injury occurred, as well as the learnings from the AE. The AEs were usually patient fall with injury or hospital-acquire pressure injury (HAPI). Other adverse patient events, such as catheter-associated urinary tract infection (CAUTI) and central line-associated blood stream infection (CLABSI), are also addressed to raise awareness and share learnings from the AEs. Depending on the nature of the discussion during Zero Harm meetings, participants may feel commended or blamed for specific AEs that are discussed. Participant reactions may be influenced by their previous experiences with AEs (Christie, Jones, 2015), as well as the tone of the discussion in the Zero Harm meetings. Current methods used in the Zero Harm initiative may have undermined Just Culture if participants perceive a climate of

blame and disengage from communication and learning, making the goal of Zero Harm unattainable (Outcome Engenuity, 2019).

A culture of accountability was promoted at the project site, although novice leaders in the organization (Clinical Nurse Managers and Team Leaders), like all novice leaders, may struggle to develop specific accountability skills. Accountability includes three main characteristics: defining responsibility; answering about actions, by those who have the responsibility for the duty; and enforcing sanctions or disciplinary actions when appropriate (World Health Organization, 2019).

A culture of safety was a subculture of the organizational culture and reflects the comfort of individuals to draw attention to possible hazards or actual errors, without fear of condemnation from leadership (Wachter, 2012). In all organizations, there are often employee perceptions that differ throughout the organization, and even across disciplines and entities within a healthcare system (Giffords, & Dina, 2003). Leaders helped manage these differences of perceptions through dialogue for understanding, and actions such as need for additional education. Examples of behaviors that were contrary to a Just Culture have been observed on occasion, such as actions that punish for a human error, as opposed to consoling for a human error. When a leader has experienced blame, or other negative consequences, for an AE instead of Just Culture, that leader was motivated to support improvement to help try to prevent these same negative consequences from happening to others in the Just Culture environment (Christie, & Jones, 2013; Khatri, Brown, & Hicks, 2009). Leaders in the Quality Programs department at the project site strived for continuous improvement in the area of Just Culture, as reflected through their involvement and support of the Just Culture program. As key organizational

leaders, nursing leaders were also committed to making improvements in Just Culture knowledge and the application of concepts.

The learning climate at the project site reflected the degree to which the organization utilized opportunities to learn from errors or failures, and to make improvements. Organizations that support a learning-oriented climate demonstrate that "failure and mistakes are used as an input for improvement and not as a reason for punishment" (Caniëls, & Baaten, 2019, p. 563). The project site Just Culture certified trainers were utilized to facilitate change in the organizational culture, moving toward Just Culture. However, there were only two of these trainers, and with an organization the size of the project site, two trainers are insufficient. There is support for small tests of change from many nursing units, as well as the Performance Improvement department, as seen in the frequent unit reports in the Quality and Safety Committee meetings, as well as Nursing Leadership Council. It was not uncommon to hear updates from a pilot, or a PDCA cycle on a patient care area. Psychological safety, a "shared belief that the team is safe for interpersonal risk taking" (Edmondson, 1999, p. 354), can vary depending on the leader. The pace of activity at the project site was a rapid one, and time for reflection and evaluation was not always integrated in project timelines. It had to be intentionally planned and carved out and supported by leadership.

Key personnel and stakeholders. The stakeholders for this QI project were the individuals in the following roles at the project site: CNO; Nursing Directors of involved units; Clinical Nurse Managers of clinical patient units; Team Leaders of clinical patient units; Certified Just Culture nurses; and the Patient Safety Officer and Director of Quality Program. The Project Leader was the DNP student who conducted the project and leading the educational sessions.

As Just Culture is only one aspect of the entire patient safety culture, it was important to have a solid understanding of the landscape of the organization regarding not only Just Culture, but also patient safety culture. To best understand the problem that needed improvement, as well as the history and culture at the project site, the Project Lead had conversations and meetings with the stakeholders to gain insight and context. These interactions lead to a more complete understanding of the current situation, the desired improvement, the implications for the organization and how this DNP project would influence these needs.

Procedures: Implementation Process

The characteristics of the educational intervention that were implemented in this DNP project included a series of two, one-hour sessions, offered on different days of the week, at different times of day to optimize leaders' opportunity for attendance. Informal discussions with potential organizational leader / participants indicated that several one-hour educational sessions were preferable to one long session. The educational materials used in the training sessions included both didactic and experiential learning components.

Appendix C contains the slides used in educational session one, and Appendix D contains the slides used in educational session two. Didactic strategies included content about the project and relevant Just Culture principles. A case scenario, presented in Appendix E, was developed to reflect multiple scenarios in a day in the life on a typical patient care unit, but no identifying information was included (Outcome Engenuity, 2017). Experiential learning occurred through role plays using the developed case studies where participants applied the Just Culture Algorithm© (Outcome Engenuity, 2017), and then engaged in reflection.

Session one content included an overview of the project and a review of the Just Culture concepts, including the three behaviors, three duties, and the use of the Just Culture Algorithm©

(Outcome Engenuity, 2017). The case studies in this session were adapted based on the needs of the participants, and their unique settings, such as a specifically surgical setting. Objectives for the first educational session included: (a) review core Just Culture concepts, including three duties (avoid unjustifiable risk or harm; follow a procedural rule; produce an outcome), and three behaviors (human error; at-risk behavior; reckless behavior); (b) illustrate behaviors with examples of current practice; and (c) describe how to complete an event investigation and use of the Just Culture Algorithm©.

Objectives for the second educational session included a) brief review of Just Culture concepts; b) conduct simulated event investigation; and c) debrief simulated event, sharing learnings. Session two included a brief review of Just Culture concepts and one large scenario for role play that illustrated multiple duty breaches, provided good examples of Just Culture, and used the Just Culture Algorithm©. Nurses at the project site who hold Just Culture Certification assisted with demonstrations of how nurse leaders may respond to adverse events, illustrating an example of blaming (what not to do), and an example of Just Culture principles, and demonstrating behaviors consistent with accountability and support for the employee (what to do).

A site coordinator was assigned by the project site and was a bridge between the project site, the student, and the academic institution where the student is enrolled. Products for the DNP project were created by the DNP student, and reviewed by the student's committee. With the help of the project site coordinator, nurse leaders were invited, via email, to attend sessions from a list of possible dates, and they chose the two sessions that best fit their schedule. Additionally, in preparation for and prior to each educational session, the Project Lead used personal reflection

to discern her own personal beliefs, biases, and ideas about Just Culture and the same techniques were utilized in the educational sessions for participants (Kitchenham, 2008).

Assistance was sought from the project site Quality Programs Director and Patient Safety Officer, and Just Culture-certified nurses in development of the intervention as needed. Nursing Directors assisted with support for their leadership teams to participate in the intervention, and attendance was endorsed by the CNO. Resource availability was important to consider. Carving out time for education and training can be a challenge for leaders in hospitals, because they often have to choose between completing the tasks and activities necessary for everyday operations to complete ones that are directed to this improvement effort (Freeman, Morrow, Cameron & McCullough, 2016). Thus, leaders recruited to participate in this project had support from their supervisors to be intentional in participating in these educational sessions and learning about Just Culture.

Prior to and after completion of the educational sessions, surveys were administered to participants to assess perceptions of Just Culture concepts. These surveys gathered demographic information, as well as administered the Just Culture *Assessment Tool* (JCAT) (See Appendix F). JCAT surveys were administered prior to the first session, and then again at 30-days following the second session to evaluate the educational session and nurse leaders' perceptions of Just Culture. Surveys were distributed with the help of the project site coordinator to nurse leaders via email. Strategies such as reminders, using respected leaders' names on the email messages, and piloting the survey questions, have been shown to increase response rates to online surveys (Monroe, & Adams, 2012). Email reminders included a respected leader's name, who is the site coordinator, were sent at one week, and three weeks before the survey closes. Also, the site coordinator and DNP Project Chair field tested the survey for usability and feasibility.

Continuing education evaluations, a participant feedback tool from the project site's Clinical Development department, were completed by participants at the end of both session one and session two.

A detailed timeline of project activities is included in Table 5.

Table 5. Timeline of Project Activities

Activities	Aug -19	Sep-19	Oct 1-10, 2019	Oct 11-31, 2019	Nov 1-7, 2019	Nov 8-30, 2019	Dec-19	Jan-20	Feb -20	Mar -20
Develop Educational Program content	XX									
IRB Submission		XX								
Coordinate room reservations for sessions.		XX								
Recruitment Strategies: * Announce Educational Program at Nursing Leadership Council * Email invitations to Managers, TLs for educational sessions.		XX								
Send pre-survey to Managers, TLs. (site coordinator)		XX								
Send reminder emails for survey to Managers, TLs. (site coordinator)		XX	XX			XX				
Deliver education sessions.				XX	XX					
Send post-survey to Managers, TLs. (site coordinator)					XX					
Analyze data.							XX			
Prepare final DNP project document.								XX	XX	
Final Defense										XX

The intervention was completed in mid-October to mid-November 2019 at the project site. Participants included nurse leaders from a variety of patient care areas at the project site, including Clinical Nurse Managers, Clinical Nurse IV -Team Leader.

Characteristics of the Individuals: Project Sample

The target sample for this QI project included nurse leaders who had direct supervisory responsibilities at the project site. Specifically, Clinical Nurse Managers and Clinical Nurse IV-Team Leaders and represented approximately 130 possible participants. Clinical Nurse Managers held the highest level of authority on patient care units, and Clinical Nurse IV-Team Leaders, were next in the reporting / organizational structure. Clinical Nurse IV-Team Leaders provided administrative support to Clinical Nurse Managers on the unit and carried out both clinical and leadership duties. Further, Clinical Nurse Managers and Clinical Nurse IV-Team Leaders, were in different stages of skill and acceptance of the frequency of organizational change. Different experience levels, or acceptance of change, for nurse leaders may have had an impact on utilization of the Just Culture concepts. More mature leaders utilized Just Culture in a more consistent fashion. More novice leaders needed more practice and skill development (Benner, 1982). The patient units and areas in the sample included: all Heart & Vascular units, all Medicine & Short-Stay units, all Inpatient Surgical units, all Women's units, as well as procedural and surgical service areas.

The project site also demonstrated consistent support of nurse leader development. This was observed in the project site Nursing Leadership Council meetings, the group that supports leader engagement, development and organizational strategy. Educational presentations on various topics were presented at almost every meeting and utilized different methods of education to include engaging in dialogue, role playing, and didactic teaching. Just Culture case

scenarios have been presented in the past and received well by leaders. Because Just Culture was such an important component in the organization's approach to create a culture of safety, leaders were motivated to learn more about Just Culture, and hold it as a valuable concept and skill.

Sample recruitment. Clinical Nurse Managers and CNIV-Team Leaders were recruited. Managers were invited to attend sessions through announcements created by the Project Leader, personal invitation by the Project Leader during Nursing Leadership Council meetings, and through email invitations distributed to all Nurse Managers by the project site coordinator. CNIV-Team Leaders were invited through email invitations distributed to all the Team Leaders, forwarded from the Clinical Nurse Managers, by the project site coordinator. Participation in the educational session was encouraged through an organizational expectation communicated by the CNO. Continuing education (CE) credit hours were offered for participation in the educational sessions through the Clinical Development department at the site; the offering of CE hours was anticipated to enhance participation. The project site coordinator coordinated the CE documentation process. Surveys were not limited to only nurse leaders who attended the educational sessions, in that all Nurse Managers and Team Leaders were invited to complete the surveys, through the link on the emails from the site coordinator.

Variables and Data Collection Instruments

The primary variable of interest in this project was nurse leaders' perception of Just Culture; the educational intervention is expected to improve participants' understanding of these concepts. Data from the pre- and post-intervention surveys were gathered and de-identified, as a personal identification code was included in the survey to protect participant identity. Additionally, demographic data were collected to examine the relationship between demographic

characteristics and principles of Just Culture. The specific demographic data elements collected in this project are shown in Table 6.

Table 6. Demographic Data Elements

Data element	Response options provided	Type of data
Current position	Nurse Manager Team Leader Other, please specify	Discrete
Number of years worked at the project site	Numeric	Continuous
Years of experience as a nurse	Numeric	Continuous
Highest level of nursing education	Bachelors of Nursing Masters degree	Discrete
Number of years in a formal nurse leader position	Numeric	Continuous
Participant's age range (in years)	26-35 36-45 46-55 56-65 > 65	Continuous
Prior education completed on Just Culture	One-on-one education Classroom education Online modules, such as LMS or other modules Information in Leadership meetings Conferences Other, please specify	Categorical

Just Culture perceptions were measured using the *Just Culture Assessment Tool* (JCAT), a tool developed by Petschonek, et al. in 2013. The JCAT was developed to assess the six dimensions of Just Culture. Testing was completed regarding reliability, and the range for Cronbach's alpha was between 0.63-0.86, with all but one greater than 0.70 (Petschonek, et al., 2013). The JCAT was also recently adapted for academic settings, and Cronbach's alpha was 0.75 (Walker, Altmiller, Barkell, Hromadik, & Toothaker, 2019). Malone and Darcy (2019) applied the JCAT to aircraft maintenance workers, and the range for Cronbach's alpha was 0.699 to 0.859, with an overall Cronbach's alpha of 0.946.

The JCAT has six dimensions: feedback and communication about events; openness of communication; balance; quality of event reporting process; overall goal of continuous improvement; and trust (Petschonek et al., 2013). Table 7 includes the definitions and questions for each of the JCAT dimensions. Participants rated each item on a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree". Responses were coded and scored accordingly, where 1 = *strongly agree* and 7 = *strongly disagree*; therefore, lower scores reflected more agreement with the perception of the JCAT dimension items. Seven JCAT items were reverse scored, due to the negative wording of the items, noted in Appendix F.

Table 7. Definitions for JCAT Dimensions and Items

Dimension	Definition	Questions
Balance	One's perceptions of fair treatment within the hospital as it relates to errors, error reporting, and its systems approach to medical error.	Staff members are usually blamed when involved in an event. Staff members fear disciplinary action when involved in an event. When an event occurs, the follow-up team looks at each step in the process to determine how the event happened. I feel comfortable entering reports about events in which I was involved. Staff members use event reporting to "tattle" on each other.
Feedback and Communication about events	One's beliefs regarding whether the organization does an effective job of sharing event information about the events and the outcome of evaluating events.	The management does a good job of sharing information about events. We do not know about events that happen in our unit. I often hear about event conclusions and outcomes.
Openness of Communication	The willingness of individuals to communicate event information upwards to supervisors and hospital administrators e.g., willingness to reveal events, share events information,	Staff feel uncomfortable discussing events with supervisors. Supervisors respect suggestions from staff members. Staff can easily approach supervisors with ideas and concerns. If I had a good idea for making an improvement, I believe my suggestion would be carefully evaluated and taken seriously.

	and to make suggestions for improvement within the unit or the organization.	
Overall Goal of Continuous Improvement	One's belief that the organization as a whole demonstrates a goal of continuous improvement, characterized by a willingness to learn from events and make improvements to the hospital system.	There are improvements because of event reporting. The hospital devotes time / energy / resources towards making patient safety improvements. By entering reports, I am making the hospital a safer place for the patients. The hospital sees events as opportunities for improvement.
Quality of the Event Reporting Process	One's perceived quality of the event reporting system (which includes the process of entering reports and the ability to follow up on these reports), whether employees are given time to report, and to what extent the employees believe the reporting system is monitored and maintained.	Coworkers discourage each other from reporting events. The event-reporting system is easy to use. Reports are being evaluated and reviewed after they are entered. I am given time to enter event reports during work hours. My supervisors encourage me to report.

Trust	The extent to which individuals trust the organization, their supervisors, and their co-worker.	The hospital uses a fair and balanced system when evaluating staff involvement in events. I trust that the hospital will handle events fairly. The hospital adheres to its own rules and policies. I feel comfortable entering reports where others were involved. I am uncomfortable with others entering reports about events in which I was involved.

(Petschonek et al., 2013, p.15)

The JCAT was formatted in the Qualtrics platform by the Project Lead, to facilitate online administration. Pre-intervention survey (JCAT) was administered to gather data assessing perceptions regarding Just Culture. Post-intervention survey (JCAT) was administered to gather data assessing perceptions following the educational session. (See Appendix G.) Permission was granted to use the *Just Culture Assessment Tool* (JCAT) (personal communication, J. Hoffman, Feb 15, 2019) (See Appendix H).

Ethics and Human Subjects Permissions

Prior to implementing this project, a proposal was submitted for human subjects approval through the project site's Institutional Review Board (IRB). After receiving IRB approval and prior to launching the project, permission to conduct onsite was obtained from the CNO.

All data obtained for this study were password protected. Any data obtained from the project site Quality Programs department were de-identified, to include the results from the project site Culture of Safety survey for setting description. Participation in the educational sessions was encouraged but not mandatory.

Data Analysis

Data were analyzed using descriptive statistics, paired t-tests and an independent t-test to detect differences between pre- and post-intervention survey responses. Although the samples were not completely independent, the independent t-test was run to provide additional support for the paired t-test results, in the context of a small sample. The analysis was completed using SPSS and in consultation with the School of Nursing statistician.

To match survey responses, a personal identification code was used. Demographic questions were only asked on the pre-intervention survey in anticipation that participants would respond to both surveys.

Resources and Budget

The resources needed to carry out this project included the following: capacity to display slides for educational sessions, note cards, paper copies of the big scenario for session two, rooms for educational sessions, capacity to send emails for invitations and link for surveys. The physical space needed to hold the educational sessions was available at the project site. There were classrooms and large meeting spaces at the project site, and rooms were reserved in both the Heart & Vascular Hospital as well as the Main Hospital, to accommodate the large geography of the project site.

The organizational cost of this project was the cost incurred for Managers to participate in this project. Because Managers were salaried, the organization did not incur overtime costs. Likewise, Team Leaders were allocated administrative time, so their attendance in the educational sessions did not contribute to overtime costs.

The budget needed to carry out this project was expected to be minimal, with a small amount needed for educational supplies, and all time to implement the project by the DNP student. These costs were supported by the DNP student.

Because the email invitations distributed for recruitment used organization email addresses, no additional costs were accrued. The site coordinator allocated eight hours of her time for the project.

Barriers and Facilitators to Project Implementation and Sustainability

For a project to be successful in any organization, readiness for implementation was important to assess, as well as understanding the barriers and facilitators. A potential barrier in the study site would be allocation of time and resources for nurse leaders to attend the educational sessions. Prioritization of time commitments was a continuous need for leaders,

contributing to choices about which activities are included in the daily schedule or have to be declined. Strategies to overcome this barrier included the setting of the expectation of participation by the CNO, and Nursing Directors, as well as scheduling the classes to avoid known time conflicts (other surveys, annual evaluations which take time for nurse leaders). Several participants reflected on the CE evaluations that time would be a barrier to changing practice.

The Quality Programs Department at the project site was responsible for conducting and analyzing the HSPSC information. Connecting results from this DNP project with the results from upcoming HSPSC will support sustainability, as Just Culture is one aspect of patient safety. Organizations with Just Culture need to be willing to reveal both weaknesses and excellence (Frankel, Leonard, & Denham, 2006). The Quality Programs department can support sustainability through championing the reporting system through increased education on entering reports, leading to the understanding that reporting leads to a safer environment. While it might have been uncomfortable to discuss a gap or perception of a gap in Just Culture, the project site demonstrated a willingness to improve through support of this DNP project and other organizational initiatives in line with patient safety. This project helped open lines of communications, and opportunities for developing relationships between Nurse Leaders and Quality Programs, assisting with the strength of the Culture of Safety.

Sharing learnings was important not only to prevent future AEs, but also to sustain improvements from this DNP project. The Project Lead shared findings and implications for practice with several groups in the project site, including Nursing Leadership Council, Quality & Patient Safety Committee, Nursing Research & Innovation Council. By sharing this information,

the expectation for sustainability, and continued improvement was set, and specific areas were identified for continued growth.

As with any initiative, sustainability took focus and monitoring by organizational leaders. Since two levels of nursing organizational leaders were involved in this intervention, it was more likely to be sustained. Also, to be sustainable, updates at leadership meetings must be ongoing. Organizational, division and unit-based focus were important to maintain the momentum, and sustainability. These supports were necessary to support Just Culture, and to foster ongoing support for the development of Just Culture at the project site.

Chapter Summary

Organizational settings can promote or detract from improvement efforts. The organizational culture of the project site promoted quality improvement, and supported the project implementation. Support was received from the project site coordinator and organizational leaders as well.

Project implementation required frequent communication with the project site coordinator, to facilitate information flow to participants, process for CE, and assure timelines were correct. Participation from nurse leaders at the project site was moderate, and survey completion from participants was low, in spite of reminder messages from the project site coordinator.

The goal was to see improvements in the JCAT scores post-intervention, indicating that the educational program had an impact on the perceptions of Just Culture concepts for nurse leaders.

CHAPTER 5: RESULTS

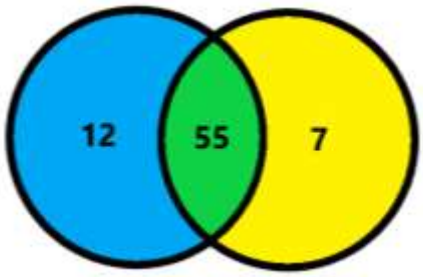
Introduction

The purpose of this DNP project was to provide project site nurse leaders with an educational program to improve perceptions about Just Culture concepts, and to strengthen skills in the application of Just Culture knowledge and tools. The details of the results of the survey responses are described below.

Description of Sample

Clinical Nurse Managers and CNIV-Team Leaders participated in the Just Culture educational intervention, 67 in educational session one, and 62 in educational session two, representing just less than half of all potential targeted nurse leader participants. Fifty-five of these participants overlapped, participating in both sessions (Figure 2).

Figure 2. Nurse Leader Attendance for Education Sessions



Legend:

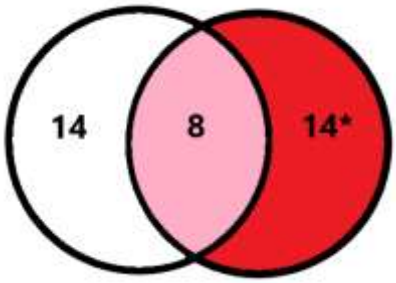
Blue = Session 1

Yellow = Session 2

Green = Both Session 1 and Session 2

Twenty-two nurse leaders completed pre-surveys. After excluding two entries for the post-intervention for missing data, 22 nurse leaders returned post-surveys. From these response groups, eight participants completed both the pre- and post-surveys (Figure 3).

Figure 3. Surveys Returned by Nurse Leaders



Legend:

White = Pre-survey

Red = Post-survey *2 excluded for missing data

Pink = Both pre- and post- surveys

Leaders participating in the intervention specifically expressed their appreciation for being included in the educational opportunity. Four nurse leaders who completed the post-survey did not attend any of the educational sessions. Demographic characteristics are provided in Table 8.

The majority of participants were Bachelors-prepared (n = 16). The most frequently reported participant age range was 36-45 years (36.3%). Participants indicated that they had worked at the project site for an average of 10 years, with a range of two to 41 years (SD = 9.7 years). While the average years of experience as a nurse was almost 18 years (range = four to 42 years, SD = 11.5 years), the average years in a formal nurse leader position was 7.1 years (range = one to 30 years, SD = 8). Participants were directed to choose all categories that applied when answering about prior education received for Just Culture. Most responses included multiple choices regarding type of education received for Just Culture. Online education modules through the LMS served as the primary sources of Just Culture education, conferences were the least frequent.

Table 8. Demographic Characteristics of Survey Participants

Data element	Response options provided	*n*	Percent of total	*M* (*SD*)	Range
Current position	Nurse Manager	6	27.3%	--	--
	Team Leader	16	72.7%	--	--
	Other, please specify	0	0%	--	--
Number of years worked at the project site	Text	--	--	10 (9.7)	2—41
Years of experience as a nurse	Text	--	--	17.8 (11.5)	4—42
Highest level of nursing education	Bachelors of Nursing	16	72.7%	--	--
	Masters degree	6	27.3%	--	--
Number of years in a formal nurse leader position	Text	--	--	7.1 (8)	1—30
Participant's age range (in years)	26-35	6	27.3%	--	--
	36-45	8	36.3%	--	--
	46-55	4	18.2%	--	--
	56-65	4	18.2%	--	--
	> 65	0	0%	--	--
Prior education completed on Just Culture (multi-select allowed)	One-on-one education	5	22.7%	--	--
	Classroom education	10	45.5%	--	--
	Online modules, such as LMS or other modules	15	68.2%	--	--
	Information in Leadership meetings	10	45.5%	--	--
	Conferences	3	13.6%	--	--
	Other, please specify	0	0%	--	--

Analysis of Pre- and Post-Intervention JCAT Scores

Results from paired t-test analysis of pre- and post-intervention responses (n = 8) for participants who completed both surveys, and could be "matched" is presented in Table 9.

Table 9. Descriptive Statistics for Variables used in Paired t-test

	n		*M* (*SD*)		Standard error mean	
JCAT Dimension	*Pre-*	*Post-*	*Pre-*	*Post-*	*Pre-*	*Post-*
Feedback and communication about events	8	8	7.88 (4.998)	7.38 (3.623)	1.767	1.281
Openness of communication	8	8	12.63 (8.749)	11.00 (3.295)	3.093	1.165
Balance	8	8	13.50 (5.657)	14.25 (3.882)	2.000	1.373
Quality of event reporting process	8	8	13.25 (5.175)	13.63 (4.307)	1.830	1.523
Continuous improvement	8	8	7.38 (6.116)	7.88 (3.091)	2.162	1.093
Trust	7	7	12.29 (6.157)	12.57 (3.690)	2.327	1.395

There was a difference in average scores between the pre- and post-intervention groups on the following dimensions of the JCAT: feedback and communication about events, and the openness of communication, with lower scores noted post-intervention (i.e., closer to 1). The desired response is lower scores post-intervention, which reflects more agreement with the JCAT dimensions, and Just Culture principles, and possibly a more positive perception. There was a difference in the average scores between the pre- and post-education groups for the remaining JCAT dimensions (balance, quality of event reporting, overall goal of continuous improvement, and trust), with higher scores observed in the post-intervention group (i.e., closer to 7).

In general, these results indicate that there was improvement in the following post-intervention JCAT domains: feedback and communication about events, and the openness of communication. Lower post-intervention scores, reflect agreement with the Just Culture items in these *JCAT* dimensions, and possibly a more positive perception of Just Culture. For the remaining domains, there was no improvement demonstrated in the post-intervention JCAT results, responses moved toward disagreement with the Just Culture items in these JCAT dimensions, and possibly a more negative perception of Just Culture.

Table 10 presents the results of the paired t-tests for the sample of participants who completed both pre- and post-intervention surveys (n = 8). While there were no significant differences in the mean scores, the largest difference was in the dimension of openness of communication, where on average, the post-intervention scores were 1.625 points lower than the pre-intervention scores (95% CI [-6.356, 9.606]). Such a large difference in the scores reflects a strong movement toward agreement of the Just Culture items in this JCAT dimension, thus demonstrating improvement.

Table 10. Results of Paired t-test (n = 8)

JCAT Dimension pre- and post- pairs	*M* (*SD*)	Standard error mean	95% CI	t	df	Sig (2-tailed)
Feedback and communication about events	0.500 (4.000)	1.414	[-2.844, 3.844]	0.354	7	0.734
Openness of communication	1.625 (9.546)	3.375	[-6.356, 9.606]	0.481	7	0.645
Balance	-0.750 (4.713)	1.666	[-4.690, 3.190]	-0.450	7	0.666
Quality of event reporting process	-0.375 (3.204)	1.133	[-3.054, 2.304]	-0.331	7	0.750
Overall goal of continuous improvement	-0.500 (4.536)	1.604	[-4.292, 3.292]	-0.312	7	0.764
Trust	-0.286 (5.823)	2.201	[-5.671, 5.099]	-0.130	6	0.901

An independent t-test was conducted to compare all pre- and post-implementation JCAT scores. Because only eight responses from the pre- and post-intervention surveys could be matched, all pre- and post-intervention surveys were combined to conduct the independent t-test. The independent t-test was run for comparison purposes, to augment the results from the paired t-test. The results of the independent t-test were consistent with the results of the paired t-test, reflecting improvement in the same JCAT dimensions (*feedback and communication about events*, and *openness of communication*). Table 11 shows the descriptive statistics for each group and on all dimensions of the JCAT. Differences were observed in the average scores between groups on all dimensions.

Table 11. Descriptive Statistics, Variables used in Independent t-test Analysis

	n		*M* (*SD*)		Standard error mean	
JCAT Dimensions	*Pre-*	*Post-*	*Pre-*	*Post-*	*Pre-*	*Post-*
Feedback and communication about events	22	24	9.45 (4.032)	6.96 (2.612)	0.860	0.533
Openness of communication	22	24	14.50 (7.242)	9.96 (3.420)	1.544	0.698
Balance	22	24	15.86 (5.947)	13.25 (4.426)	1.268	0.903
Quality of event reporting process	22	22	12.86 (3.681)	12.32 (3.630)	0.785	0.774
Overall goal of continuous improvement	22	24	9.14 (5.768)	6.67 (2.316)	1.230	0.473
Trust	22	23	12.95 (5.559)	10.96 (3.496)	1.185	0.729

Table 12 presents the results of the independent t-test analysis. There were significant differences ($p < 0.05$) in the means of the pre-intervention group and post-intervention group for the following categories: feedback and communication about events ($t_{35.473} = 2.467$, $p = 0.029$), openness of communication ($t_{29.341} = 2.680$, $p = 0.038$). These results suggest that the educational intervention and role playing had an impact toward improving in the nurse leaders' communication regarding Just Culture. Based on the scores, the educational intervention did not have an impact on the nurse leaders' responses in the areas of continuous improvement, trust, balance, and the quality of event reporting.

Participants in the intervention were actively engaged in the role play portion of the educational sessions, even offering real-life examples from their own settings. Applying the Just Culture examples, participants solicited advice on how to manage situations from other participants and instructors. The desire to learn more about Just Culture, and have additional opportunities for role playing was expressed by many participants during the intervention.

Table 12. Results of Independent t-test (n = 22)

JCAT Dimensions		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI
Feedback and Communication	Equal variances assumed	5.105	.029	2.513	44	.016	2.496	.993	[.494, 4.498]
	Equal variances not assumed			2.467	35.473	.019	2.496	1.012	[.443, 4.549]
Openness of Communication	Equal variances assumed	4.584	.038	2.757	44	.008	4.542	1.647	[1.222, 7.862]
	Equal variances not assumed			2.680	29.341	.012	4.542	1.695	[1.078, 8.006]
Balance	Equal variances assumed	1.344	.253	1.700	44	.096	2.614	1.537	[-.484, 5.711]
	Equal variances not assumed			1.679	38.643	.101	2.614	1.557	[-.536, 5.763]
Quality of event reporting	Equal variances assumed	.039	.845	.495	42	.623	.545	1.102	[-1.679, 2.770]
	Equal variances not assumed			.495	41.992	.623	.545	1.102	[-1.679, 2.770]
Continuous Improvement	Equal variances assumed	9.945	.003	1.936	44	.059	2.470	1.276	[-.101, 5.041]
	Equal variances not assumed			1.875	27.124	.072	2.470	1.317	[-.233, 5.172]
Trust	Equal variances assumed	2.103	.154	1.450	43	.154	1.998	1.378	[-.781, 4.777]
	Equal variances not assumed			1.436	35.102	.160	1.998	1.391	[-.827, 4.823]

Cronbach's alpha was calculated for the pre- and post-intervention groups. This reflects the internal consistency, and the relation of the items in the group. All dimensions for the pre-intervention were greater than 0.70, with the exception of quality of event reporting (0.448). For the post-intervention dimensions, all were less than 0.70 except for the dimension of continuous improvement. This analysis is shown in Table 13.

Table 13. Cronbach's alpha Pre- and Post-Intervention Groups, by JCAT Dimension

JCAT Dimensions	Cronbach's alpha (pre-intervention)	Cronbach's alpha (post-intervention)
Feedback and communication about events	0.768	0.524
Openness of communication	0.878	0.531
Balance	0.811	0.544
Quality of event reporting	0.448	0.492
Continuous Improvement	0.957	0.824
Trust	0.771	0.564

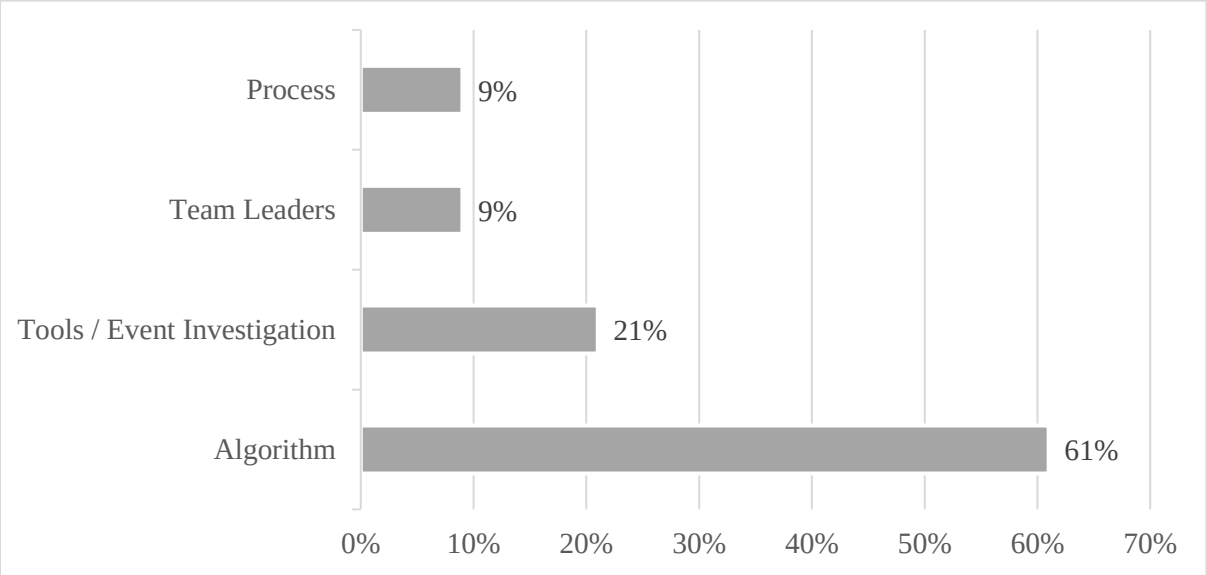
At the end of each educational session, participants completed CE evaluations, with the following number of completions for each session: session one $n = 63$ and session two $n = 58$. The first four evaluation items asked participants to provide ratings, choosing excellent, good, fair, or poor, and results for these items are presented in Table 14. All responses reflected either *excellent* or *good* ratings, with no responses indicating *fair* or *poor* ratings.

Table 14. Continuing Education Evaluation Responses for Rating Questions

Continuing Education Evaluation Questions	Session 1 % Excellent	Session 1 % Good	Session 2 % Excellent	Session 2 % Good
Please rate the effectiveness of this continuing nursing education activity.	84%	16%	91%	9%
Please rate the audiovisuals/handouts used for this workshop.	78%	22%	78%	22%
Please evaluate the expertise of each presenter individually (RB).	83%	17%	95%	5%
Please evaluate the expertise of each presenter individually (RA).	--	--	97%	3%
Please evaluate the expertise of each presenter individually (JL).	--	--	95%	5%
Please rate your intention to change your practice as a result of this educational activity.	87%	13%	93%	7%

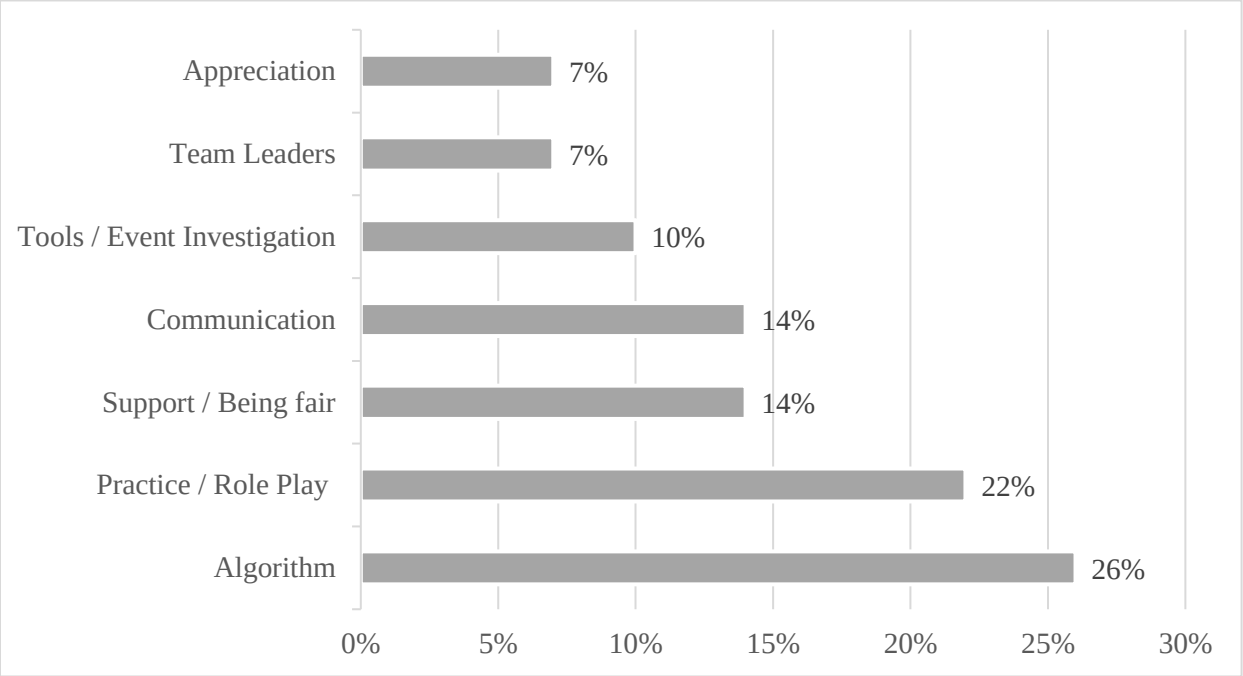
The remaining three items included text responses, as described below. The item asking participants to describe how they intend to change their practice as a result of this educational activity produced a variety of results, pointing to the importance of these educational sessions. For session one, which presented the Just Culture overview, Just Culture algorithm©, and case scenarios, these evaluation item responses were mostly focused on use of the algorithm (61%), followed by use of tools / event investigation (21%), Team Leader focus (9%), and processes (9%). Session one responses to this item are shown in Figure 4.

Figure 4. Session one responses, "How do you intend to change your practice?"



For session two, which presented a brief review of Just Culture, and demonstrations of event investigation as well as role play opportunities for participants, evaluation item responses were more varied, and reflected intention to use the algorithm (26%), practice / role play (22%), support / being fair (14%), communication (14%), tools / event investigation (10%), appreciation (7%), and Team Leader focus (7%). Session two responses to this item are shown in Figure 5. On this evaluation item for both sessions, there were only two participants who indicated they were already using Just Culture.

Figure 5. Session two responses, "How do you intend to change your practice?"



When asked to describe barriers that would prevent them from changing practice primarily, the majority of participants report there were none. Of those who identified barriers, participants identified the following: support on the individual unit; time; staff participation to report events; habit; need practice of application; lack of knowledge; and the need to complete a refresher every year. Among session two respondents, participants identified the following barriers: lack of assertiveness/conflict avoidance; new leader on the unit; and time (multiple participants). Overall, time and low leader confidence/conflict avoidance were described by participants in the individual comments on this item.

Chapter Summary

Nurse leaders in formal positions, Clinical Nurse Managers and Team Leaders, at the project site were invited to participate in the educational program for the intervention. A total of 22 participants completed both educational sessions as well as the surveys, six Clinical Nurse Managers and 16 Team Leaders.

Nurse leader participants have been in the nursing profession for an average of 17.8 years, and have been in a formal nurse leader position for 7.1 years. Participants have worked at the project site for an average of 10 years.

A paired t-test was completed for the survey responses that could be paired (n = 8), based on the personal identification code. Improvement was noted in the post-intervention responses in the following dimensions: feedback and communication about events, and openness of communication. Improvement was noted because of lower scores in the post-intervention survey (meaning closer to 1 = *strongly agree*), reflecting participants had an improved agreement with the Just Culture principles assessed in the JCAT.

An independent t-test was completed for all survey responses (n = 22). Improvement was noted in the post-intervention responses in all six JCAT dimensions. However, the improvements were noted to be significant in the following dimensions: feedback and communication about events, and openness of communication.

The data analysis reflects that the educational intervention, which included role play, had an impact to nurse leaders, especially in the areas of communication. A more detailed discussion of the results, and their impact on nursing practice follows in the next chapter.

CHAPTER 6: DISCUSSION

Introduction

This DNP project implemented an educational intervention to reframe nurse leader responses to adverse events, through education about Just Culture concepts and role play. The findings of this project indicate that the intervention improved leader perceptions about two dimensions of the *Just Culture Assessment Tool* (JCAT): feedback and communication about events, and openness of communication. Nurse leaders reported stronger agreement with Just Culture principles after the educational intervention regarding willingness of individuals in their organization to communicate about events as well as their beliefs about the organization's effectiveness in sharing event information. Further, project participants valued the didactic content, an opportunity to role play, and expressed an intention to adopt Just Culture content into their leadership practice.

Discussion of Findings

Nurse leaders, especially those in formal leadership positions, have many important duties or areas of responsibility to their units. Responses to AEs are among the duties that influence patient safety culture and Just Culture, through accountability and learning. To be effective, skills for appropriate AE response need to be learned and practiced. Although education is helpful in supporting nurse leaders (Mira et al., 2017; Xie et al, 2017), it has greater influence when combined with additional resources, to facilitate a patient safety culture and Just Culture. Examples of additional resources include in-person workshops (Ginsburg, Norton, Casebeer, & Lewis, 2005), and opportunities for skills practice such as role play (Freeman,

Morrow, Cameron & McCullough, 2016). These learning strategies have been reported to improve nurse leaders' abilities to use Just Culture principles in their leadership practices (Freeman, Morrow, Cameron & McCullough, 2016; Ginsburg, Norton, Casebeer, & Lewis, 2005). Project participants reported engaging in a variety of educational modalities about Just Culture, with the highest percent reporting completing online modules about Just Culture. Using a review of the Just Culture literature as a guide, the intervention implemented in this project was designed to include both education and role play, an activity that separates this intervention from previous improvement efforts at the project site related to Just Culture. The role play simulated an event investigation, and provided participants with opportunities to apply principles and engage in these events. Pre- and post-intervention surveys, using the JCAT, provided a mechanism to examine nurse leader perceptions about Just Culture principles, and level of agreement with the state of the organization regarding Just Culture. The participation in the intervention was associated with improved perceptions about two Just Culture content areas: feedback and communication about events, and openness of communication.

Supporting leaders in developing their skills promotes competence and confidence, which in turn helps develop in areas of formal leadership responsibility, to include the culture of safety and Just Culture. Nurse leaders communicate vital information to their teams regarding organizational updates, important safety information, and feedback from AEs, to promote safety. Evaluation of leaders' perceptions of the safety culture, especially Just Culture, is beneficial when planning development for leaders (Fischer, Jones, & Verran, 2018; Mwachofi, Watson, & Al-Omar, 2011; Squires, Tourangeau, Laschinger, & Doran, 2010). By providing an educational program to nurse leaders, this project demonstrated an improvement in leaders' perceptions of Just Culture principles. Specific improvement was observed in the dimensions related to

communication, which is one of the core skills for leaders, communicating vital information to their teams.

Nurse leaders also help recognize when interventions are needed specific to safety culture and Just Culture. Such recognition may involve identifying the second victim phenomenon in individuals they supervise (Ullström, Sachs, Hansson, Øvretveit, & Brommels, 2014), and they can provide supports to individuals who are experiencing this trauma when they communicate following Just Culture practices (Christie, Jones, 2015) to include providing staff support during investigation of AEs (Mira et al., 2017). This project included demonstrations of both inappropriate and appropriate responses to AEs, and provided opportunities for role play. During group discussion in the educational sessions following role play, participants shared their impressions of how it felt to observe inappropriate responses, and how they thought the staff may feel as well, in an effort to illustrate the importance of appropriate responses to AEs, and examples of their impact on staff.

Existing organization safety strategies such as the Zero Harm initiative and safety huddles may have influenced participants' view of communication importance. The two improved dimensions, *feedback and communication about events, and openness of communication*, are similar to essential components of Zero Harm and safety huddles. Team Leaders and Clinical Nurse Managers often attend daily safety huddles, where safety concerns are introduced, and briefly discussed at a high level. Participating in these activities may have influenced participants to have a more positive perception of these communication dimensions of Just Culture because of the comfort level with communication, as well as experiencing communications from other leaders in the project site. Ninety-five percent of participants reported having completed at least one form of previous education on Just Culture, with online

modules being the most frequent (68.2%), followed by classroom education and information in Leadership meetings (both at 45.5%). This previous education may have positively influenced project results on the pre-survey.

There were four dimensions that showed no significant improvement (*continuous improvement, trust, balance, and the quality of event reporting*) following the Just Culture education intervention. The project measured perceptions of Just Culture 30 days following the intervention. It is possible that this project did not impact these dimensions because it takes a longer period of time to impact the safety culture and impact leaders' perceptions of Just Culture.

For the *continuous improvement* dimension, the JCAT items center around the action spurred on from event reports, and creating opportunities for improvement (Petschonek, et al., 2013). It is possible that participants did not feel connected to the numerous improvement efforts underway at the entire project site but only at their local unit level, as the unit level is where nurse leaders have responsibilities and authority, and this may have diminished this dimension response. The findings in the *continuous improvement* dimension increased post-intervention, meaning worse perceptions of Just Culture principles in this dimension.

When considering the JCAT *trust* dimension, findings may indicate that participants were influenced by previous events that shaped their perceptions of Just Culture (Christie & Jones, 2015). Items in the *trust* dimension focus on the project site using a fair system to evaluate staff involved in AEs, adherence to rules and policies, and comfort with entering reports and others entering reports involving this staff (Petschonek, et al., 2013). In the months leading up to the intervention, there was much discussion at the project site about the progression of organizational growth as well as growth as a health care system. The impact of being part of a system and a sense of uncertainty about impending change may have weakened the *trust*

dimension. Also, establishing trust, and the feeling of a fair system, may take longer than the 30 days of this project; thus, the findings for the *trust* dimension may not have been responsive to this intervention, as there was no improvement, and actually worsening perceptions of Just Culture principles in this dimension.

The *balance* dimension of the JCAT includes items that focus on blame, fear, and comfort entering reports (Petschonek, et al., 2013). Findings indicate that the educational program did not improve perceptions of Just Culture principles in this dimension, and in fact post-intervention scores were higher, possibly indicating more negative perceptions. Previous events and leader responses may influence participant perception for the *balance* dimension (Christie, Jones, 2015). Also, perceptions on the items in the *balance* dimension would take longer to change than the time allotted to this project, and may not have captured any improvements during the short timeline of this intervention.

Finally, the items in the *quality of event reporting* JCAT dimension refer to ease of use for the reporting system, encouragement to report and time to report, and evaluation of reports after entry (Petschonek, et al., 2013). The findings of the *quality of event reporting* dimension did not improve following the intervention, the post-intervention scores were higher, possibly demonstrating a more negative perception of Just Culture principles in this dimension. The project site was preparing for a change in event reporting systems at the time of this intervention, which may have weakened perceptions of the *quality of event reporting* dimension. Also, the project site was experiencing higher than predicted patient census during the time of the intervention, possibly leading to the feeling of less time to report events or evaluate reports. Taken together, these conditions may have weakened the *quality of event reporting* dimension.

Participants in the educational sessions completed CE evaluations. They gave high ratings (*excellent* or *good*, no *fair* or *poor*) for the items asking for ratings regarding the educational session, materials, and presenters. Also, intention to change practice as a result of the educational activity was rated highly, 87% excellent for session one and 93% excellent for session two. Based on the responses participants gave when describing how they intend to change their practice, it appears the educational sessions had an impact on these nurse leaders. Many responses focused on using either the algorithm or the tools and event investigation. One participant was especially appreciative for the tools, stating "I will take the time to use the tools provided—had misplaced my Algorithm to Just Culture and it was great to get another copy." Comments such as this help reinforce the need for this in-person education. Another participant suggested the education be offered once every year. The practice and role play opportunities were also mentioned in responses as a support to change practice. One participant stated "This helped me role play Just Culture scenarios so that I am better prepared for real life scenarios." Some participants reported lack of assertiveness, or that they are a new leader, in the item about barriers to preventing practice change. Supporting activities that build confidence, such as this educational session, will be important to support leaders who are new, or who lack self-confidence about their leadership skills, or specific Just Culture skills.

Limitations

There are some project limitations that are important to discuss. First, this project had a small sample size. Despite having 67 nurse leaders participate in education session one, and 62 in education session two, only 22 of them completed surveys. Further, only eight nurse leaders completed both the pre- and post-surveys, making it more challenging to complete analysis on the data, and determine if there was improvement. During the time of the intervention, there were

increased demands placed on leaders to address a high patient census. This situation may have impacted the attendance and survey completion, and therefore sample size. To address this limitation, analyses were conducted to examine responses from all attendees (independent t-test) as well as those who attended both educational sessions (paired t-test).

The survey used in this project was designed so that respondents could develop a personal identification code, and responses could be matched on both surveys. However, the analysis revealed that few (n = 8) participants provided codes that would reflect attendance at both educational sessions. Therefore, the majority of the responses were unmatched, leading to a limitation in data analysis. The ability to compare relationships is stronger when comparing the same participants for pre- and post-intervention, as it minimizes some of the factors that may influence results. In the case of this project, most participants were different, not the same for pre- and post-intervention. While there were only eight paired responses, a paired t-test was run, simply to explore perceptions to the items of the JCAT. To properly analyze all responses, as opposed to just the pairs, an independent t-test was run on all responses (n = 22). Future projects might consider administering pre- and post-surveys at the beginning and conclusion of the education session.

Finally, the timeline for this project was very short, approximately 30 days. Many aspects of culture take much longer to develop. The assessment of Just Culture using the JCAT may likely require a longer time period over which measures are taken before changes are observed, whether improvement or declines in responses. Also, to specifically evaluate Just Culture skills, another tool is needed, as the JCAT assesses perceptions, not knowledge.

Implications

The findings of this project suggest that the educational intervention improved nurse leader responses regarding communication related to feedback about events and openness of communication specific to Just Culture. One main difference with this educational intervention from previous educational offerings for Just Culture at the project site is the use of role play, which provides opportunities for leaders to practice their skills regarding Just Culture, such as event investigation and use of the *Just Culture Algorithm*©.

Before this intervention, there were minimal educational offerings about Just Culture, included content at a high level, and did not include role playing activities for learners. Moving forward, additional educational programs should be offered, to include role playing and opportunities to practice Just Culture skills and concepts. Leadership development must include specific development of the Just Culture skills and concepts, as leaders are key to managing the culture of safety and specifically Just Culture. For this project, development of the educational program was supported by the project lead (DNP student) attending Just Culture certification course. If this had not been a possibility, it would have been even more critical to partner with the Just Culture certified nurses at the project site to assist with program development. While this DNP project focused on nurse leaders, it is recommended that all organizational leaders at the project site participate in Just Culture education.

When trying to strengthen the culture of safety, and especially Just Culture, it is important to obtain baseline data to know what areas improved with the interventions. Petschonek, et al. (2013) recommend that the JCAT be used to assess perceptions on Just Culture principles, and it is especially effective when an organization is adopting Just Culture across the entire organization. Including bedside staff will be important for future projects, as well as other

hospital leaders, to obtain a full assessment of the status of perceptions on Just Culture, and then develop specific strategies to address the areas of deficiency.

Future studies should consider including an additional tool to measure knowledge of Just Culture concepts, in addition to perceptions. This design was demonstrated by Xie, et al. (2017) through administration of the Safety Attitudes Questionnaire and HSPSC. Ginsburg, Norton, Casebeer, and Lewis (2005) administered a questionnaire that included items related to patient safety culture, as well as leadership. Specifically, at the project site, future responses for the HSPSC should be correlated to determine if this project helped improve responses, especially regarding the item about non-punitive response to human error. The JCAT only assesses perceptions of Just Culture, and if the project site wants to assess knowledge as well, a different tool or modified JCAT will need to be used.

Conclusions

Nurse leaders' education is critical to provide knowledge, and build on established skills, that support their areas of responsibility, especially regarding the culture of safety (Ginsburg, Norton, Casebeer, & Lewis, 2005; Mira et al., 2017). Specific education may be included in onboarding nurse leaders for new leadership positions, or as a component of quality, safety, and improvement efforts in the organization. Many organizations in the U.S., including the project site, desire recognition as high reliability organizations, and part of achieving this goal is improving Just Culture in the organization and leaders' knowledge about integrating Just Culture into their leadership practice.

Nurse leaders who participated in this project attended a two-session educational intervention that focused on Just Culture, that included both didactic content and experiential learning activities through role play. The inclusion of role play, and opportunities to practice Just

Culture skills, was the main difference between this educational intervention and previous educational offerings at the project site regarding Just Culture may have had an impact of nurse leaders' perceptions of Just Culture.

The *Just Culture Assessment Tool* (JCAT), a tool designed to assess perceptions of the principles of Just Culture, was administered pre- and post-implementation of the educational intervention. Survey responses reflected an improvement in the feedback and communication about events, and openness of communication dimensions of the JCAT, and no improvements in the other dimensions of the JCAT. Responses indicated that participants' perceptions about Just Culture principles improved and they expressed more positive perceptions of Just Culture principles.

The main recommendation for the project site and for nurse leaders is to offer more frequent opportunities for education on Just Culture. This education should include review of Just Culture concepts, event investigation, and use of the *Just Culture Algorithm*©. The inclusion of opportunities for role play, and practice for Just Culture skills is important for growth for nurse leaders. One participant reflected on the CE evaluation that it would be good to refresh the information every year.

While the project site will continue the cadence set for the HSPSC to assess patient safety culture, it will be important to continue to assess Just Culture specifically as well. A follow-up administration of the JCAT may be helpful to determine if improvements have sustained and / or improved. Also, the project site should consider administering the JCAT to the staff, those on the front-line, who are managed by the leaders who were the target sample for this DNP project.

APPENDIX A. MATRIX OF LITERATURE REVIEW

Citation	Ginsburg, L., Norton, P.G., Casebeer, A., Lewis, S. (2005). An educational intervention to enhance nurse leaders' perceptions of patient safety culture.
Purpose, Aims, Objectives	Design training program to impact nurse leaders and psc; test effect of training program on nurse leaders' perception of psc.
Study Design/ Method	Prospective evaluation, quasi-experimental design.
Study Sample/ Setting	Nurses in clinical leadership roles at 2 Canadian multi-site teaching hospitals. n=243. Study group (attended workshop) and control group (no workshop). 92% female.
Interventions	2 Workshops for leadership improvement: a—evidence on incidence of adverse events, theory about safety and human error, tools for preventing errors. b—role of teamwork and leadership in improving safety, shared hospital's incident report data.
Major Variables (outcome variables)	Interaction between workshop and leadership improvement on perception of psc.
Measurement of variables	Questionnaires given to establish a baseline as well as post-intervention.
Analysis	ANOVA was used to look at differences post-intervention.
Results/ Findings	3 links between items identified: valuing safety, fear of negative repercussions, perceived state of safety. 3 baseline psc measures (valuing safety, fear of negative repercussions, perceived state of safety) positive correlation to workshop. Baseline scores for study group lower than control in valuing safety ($p<.001$) and perceived state of safety ($p<.05$). Valuing safety increased significantly ($p<.001$) after workshop. Perceptions of PSC decreased significantly for control group ($p<.05$). Leadership for improvement workshop impacted all 3 sections.
Quality of the Evidence	Level of evidence III <u>Strength</u>: same instrument being used decreases threats <u>Weakness</u>: directors were underrepresented in the respondent group.
Notes	

Citation	Xie, J. et al. (2017). A safety culture training program enhanced the perceptions of patient safety culture of nurse managers.
Purpose, Aims, Objectives	Eval of training program for PSC, looking at perceptions on psc, safety attitudes, rate of selected Nursing safety indicators.
Study Design/	Quasi-experimental design.

Method	Participants assigned to 5 groups and completed a training program about psc (76 hours education). Training satisfaction questionnaire (36 items) completed after training. PSC survey (42 items) and Chinese version of SAQ (31 items) were given.
Study Sample/ Setting	China. NM from 2nd level hosp. (4 inclusion criteria). n=83. Random selection led to 5 regional 2nd level hosp. N=67 completed the study. 98.5% female.
Interventions	Educational program for Nurse Managers.
Major Variables (outcome variables)	Perceptions of safety culture, safety attitudes, rate of selected nursing safety indicators Falls, HAPUs, unplanned extubations.
Measurement of variables	Pre- and post-measurement.
Analysis	Analyzed with SPSS. Frequency distributions and paired t-test looked at Chinese SAQ scores. Chi-square test used to look at PSC survey.
Results/ Findings	Positive scores for PSC survey were increased ($p<0.05$) post training program. Non-punitive response to error was still < 75%. Scores on Chinese SAQ were increased ($p<0.05$) post training program. Falls and HAPUs declined, extubations had no change.
Quality of the Evidence	Level of evidence III Strength—training questionnaire had high reliability (.89) and content validity ratio (.933). PSC survey-good reliability and validity (Cronbach alpha .889). Chinese SAQ (Cronbach alpha of 0.880) Weakness—training program was 76 hrs. long, not always practical length of time. Sample of 83. Using questionnaire may have reporting bias. Low reporting rate of adverse events. Possible self-selection bias. No control group. Only 50% NM participated in training program.
Notes	

Citation	Fischer, S., Jones, J., Verran, J. (2018). Consensus achievement of leadership, organizational and individual factors that influence safety climate: Implications for nursing management.
Purpose, Aims, Objectives	Validate framework of factors that influence TFL and psc. (safety chain)
Study Design/ Method	Delphi technique. 3-round modified Delphi design was used. 2 rounds for content development, 1 round for panel confirmation of typology.
Study Sample/ Setting	Panel: experts from clinical, admin, academic practice. Size: between 12-24. 75% female.
Interventions	N/A
Major Variables (outcome variables)	Factors influencing TFL and PSC
Measurement of variables	Consensus=agreement of 66% or more of participants with rating of 6 or 7 on Likert scale.

Analysis	Interquartile ranges and consensus percentages, for each survey round. Quantitative and qualitative analyses on round 2. Factors and final hypotheses were categorized into 3 main categories: leadership factors, organizational processes, individual factors.
Results/ Findings	Leadership factors: communication, walking rounds, safeguarding mental and physical health, leadership support of staff / empowerment. Organizational processes: resisting silos, agreement to optimize expertise. Individual factors: MD engagement and MD as safety leaders.
Quality of the Evidence	Level of evidence VI Strength—consistency and rigor with Delphi technique, leading to dependability of the framework. Retention of 80% of panel participants. Weakness—76% of panel is from US. Needs to be validated with other cultures. Consensus may not be transferrable.
Notes	

Citation	Mira, J.J., et al. (2017). Lessons learned for reducing the negative impact of adverse events on patients, health professional, and healthcare organizations.
Purpose, Aims, Objectives	Summarize knowledge of aftermath of ae, make recommendations to reduce negative impact on patients, health professional and orgs.
Study Design/ Method	Systematic review: studies related to open disclosure, second and third victims. Qualitative study with focus groups, collecting best practice for psc.
Study Sample/ Setting	15 physicians, 12 nurses who work in Spanish Health National System. No data about gender of participants.
Interventions	N/A
Major Variables (outcome variables)	N/A
Measurement of variables	N/A
Analysis	Focus groups were tape recorded and transcribed. Posterior analysis completed.
Results/ Findings	8 categories for recommendations: safety and org policies, patient care, proactive approach to prevent ae, support healthcare team, activation of resources, informing patients, analysis of event, protecting reputation of workers and org. Arranged into 4 dimensions: Preventing aftermath, patients as first victims, professionals as second victims, orgs as third victims.
Quality of the Evidence	Level of evidence V Strength: proposals can be applied to hospital settings. Weakness: Proposals rely on NM assuming a proactive role.

Notes	Different meaning of "error" in different languages. Important to know in order to be meaningful and avoid confusion.

Citation	Ullström, S., Sachs, M., Hansson, J., Øvretveit, J., Brommels, M. (2014). Suffering in silence: A qualitative study of second victims of adverse events.
Purpose, Aims, Objectives	Investigate how HC professionals were affected by involvement in adverse events, and what support did they need.
Study Design/ Method	Interview guide used. (30 questions) Qualitative study.
Study Sample/ Setting	Swedish University Hospital; employees who had experience a serious adverse event (n=133) BUT only 21 agreed to be interviewed. 76% female. 10 MDs, 9 RNs, 2 allied healthcare professionals.
Interventions	N/A
Major Variables (outcome variables)	N/A
Measurement of variables	Qualitative content analysis used.
Analysis	Qualitative content analysis and systematic classification process was completed. Adverse events were categorized (drug treatment, diagnostics, invasive procedures, suicide, other), and patient outcomes were categorized (death, permanent injury, short-term harm, no harm, no medical but patient was offended).
Results/ Findings	Impact of event—majority of informants said had affected them personally and professionally. Impact divided into 3 categories: emotional reactions, professional performance & self-confidence, duration of impact. Org support: majority--need for support, 3 categories mgmt.. institutional support, peer support, investigation process. Emotional reactions: some described shock / disbelief. Majority—sadness, anxiety, reliving event, guilt, shame, frustration, self-critical, sleep disturbances. Professional performance / self-confidence: self-doubt, insecure, thought of "what if?", majority—taking extra care at work, more difficult at work, worried about disciplinary action/ job loss. Duration of impact: majority—long-lasting, 1 yr. or more, still came back through memories, emotions. Mgmt. support: support from hospital mgmt. but not from closest level mgmt., lack of open discussions about event, if better support-attributed to local level mgmt. characteristics. Peer support: crucial, empathic colleagues, some—negative impact, tension, judgment. Investigation process: inadequate, lack of follow-up, slow, no notification about closure, worry about disciplinary action/ job loss.

Quality of the Evidence	Level of evidence VI. Strength—Leadership supported the study. Weakness—interviews were 1-3 years after event! (seems too long to be able to accurately recall). One hospital, small sample size. Possible self-selection bias.
Notes	The CNO prepared a list of employees who had experienced an adverse event, and they were sent a letter. I do not see this process working at my organization due to privacy. However, I do see great value in the findings.

Citation	Mwachofi, A., Watson, S., Al-Omar, B. (2011). Factors affecting nurses' perceptions of patient safety.
Purpose, Aims, Objectives	Examine nurses' perceptions about patient safety.
Study Design/ Method	Surveys administered. Cross-sectional Study.
Study Sample/ Setting	One public and one military hospital in Riyadh, Kingdom of Saudi Arabia. 850 nurses surveyed with random selection (566 returned).
Interventions	N/A
Major Variables (outcome variables)	N/A
Measurement of variables	Measured perceptions in 3 ways: Perceived patient safety in dept; Perceived patient safety in hospital; whether nurses feel safe as patients in that hospital.
Analysis	Used SPSS. Categorized responses into categories of influence by variables: Demographic /socioeconomic; org / systems that affect working conditions; IT system factors
Results/ Findings	Nurses reported 7.6% patient safety was poor at dept level (92.4% ranging from good to excellent). Reported 10.6% patient safety was poor at hospital level (89.4% ranging from good to excellent). For nurses feeling safe as patients, 77.4% ranged from agreed or strongly agreed. IT factors—(a) Departmental teams checking weak systems, and incorporating supportive technology significantly improve patient safety perceptions. (b) When nurses feel proficient using IT systems, more likely to perceive better dept patient safety and more likely to feel safe as patients. (c) Updated computerized drug info system raises dept patient safety perceptions. (d) confidential reporting systems for documenting medical incident report through the IT system is significant across all models. Demographic—only age was significant. Older nurses shown to be less likely to have positive perceptions of patient safety in hospital.

	System factors—significant—(a) nurses witnessing errors are less likely to have positive safety perceptions for dept or hospital and less likely to feel safe if they were a patient.(b) When nurses' suggestions are taken seriously and addressed by managers, nurse is more likely to perceive better safety in hospital and feel safer if they were a patient.
Quality of the Evidence	Level of evidence VI. Strength—categories of system, IT and demographic. Limitations—authors note limitation of difficulty to establish causation. Results may not be generalizable where nurses are from various nationalities.
Notes	

Citation	Freeman, M., Morrow, L., Cameron, M., McCullough, K. (2016). Implementing a Just Culture: Perceptions of nurse managers of required knowledge, skills, and attitudes.
Purpose, Aims, Objectives	Explore perceptions of Nurse Mgrs. in developing personal competencies in order to effectively implement Just Culture framework.
Study Design/ Method	Semi-structured interviews.
Study Sample/ Setting	Sample: Nurse managers recruited through non-probability convenience sampling. Emails sent through Research Assistant to determine interest in interview. N=9. Setting: Acute care hospital in South Western Ontario.
Interventions	N/A
Major Variables (outcome variables)	N/A
Measurement of variables	Used semi-structured interviews, with research interview guide and standard open-ended questions. (a) What is your understanding of a Just Culture? (b) What knowledge, skills, and attitudes do you need as a nurse manager to feel competent to successful implement a Just Culture in your unit? What are the challenges in implementing a Just Culture in your unit?
Analysis	Interviews were transcribed and themes identified.
Results/ Findings	Knowledge / Skills: • Education for both mgrs. and employees was essential. (Both introductory and ongoing education to feel competent and confident.)"Needed to know the model well" in order to be able to implement it. • Essential for employees to understand it too. Emphasis on suggestion to give employees exposure to Just Culture in times other than incident investigation. (Recommended that union leaders be included in educational sessions.) • Additional knowledge identified as important:

	Enhanced leadership skills; knowledge of human factors; knowledge of workflow; knowledge of self. • All identified need for leadership skills, including coaching, mentoring, counselling. Need to change perception of "meetings with staff"—seen as punitive. Need development with skills for conflict resolution; communication, ability to investigate events; critical thinking and decision-making. <u>Attitude:</u> • Need to change long-standing expectation of human perfection and blaming of individuals when errors occur. Change attitude and mindset. Easy to slip back into blame culture. • Employees "see it as punitive", "fear in the workplace" prevents conversations. • Need for mgr. to objectively analyze situations, understand "exactly what the issue is". Recognize employees need help changing their attitudes too. <u>Challenges in Implementation:</u> • Mgrs. pulled in many directions and have time constraints. Recognize importance of timeliness of investigation and follow-up.
Quality of the Evidence	Level of evidence VI. <u>Strength</u>—Broad range of experience represented in sample, in spite of small size. Findings and recommendations seem actionable. <u>Limitations</u>—small sample size of 9. Strategies need to be investigated further.
Notes	

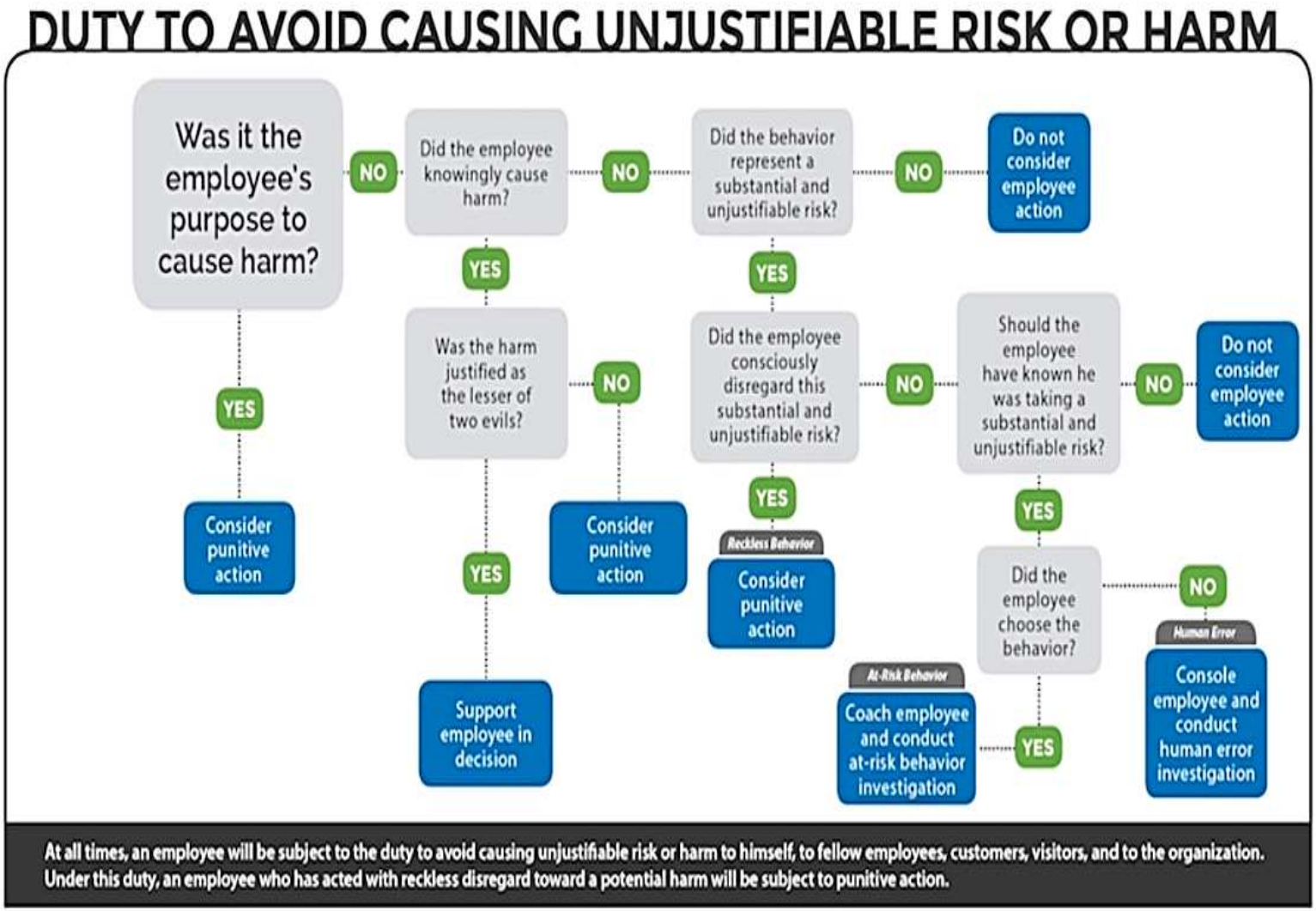
Citation	Squires, M., Tourangeau, A., Laschinger, H.K.S., Doran, D. (2010). The link between leadership and safety outcomes in hospitals.
Purpose, Aims, Objectives	Test/ refine model examining relationships among leadership, interactional justice, quality of nursing work environment, safety climate, patient / nurse safety outcomes.
Study Design/ Method	Survey mailed to RNs. Cross-sectional study.
Study Sample/ Setting	<u>Sample:</u> 600 RNs, random selection from 2007 College of Nurses of Ontario registration list. (267 RNs returned survey and met inclusion criteria) RNs with direct care responsibilities were chosen.
Interventions	N/A
Major Variables (outcome variables)	N/A
Measurement of variables	Six instruments and specific questions that measured concepts of interest and variables. Concepts: • Interactional Justice • Resonant leadership

	• Leader-nurse relationship • Safety climate • Nursing work environment • Emotional exhaustion Span, med errors, ulcers, absenteeism, intent to remain
Analysis	Confirmatory factor analysis. Chi-square used to look at fit between hypothesized model and observed data.
Results/ Findings	• RNs did not have high-quality relationships with their immediate nurse leaders. • RNs perceived leaders demonstrated moderate level of interactional justice and resonant leadership style. • Leaders had large spans of controls, on avg accountable for 2 or more units, with 70 or more direct reports (positively skewed). Safety outcomes: • RNs had avg of 3 HAPIs, 3 med errors in past 4 months. • RNs reported unlikely to leave unit and reported significantly less sick time than other Canadian RNs. Model revealed: • Relationship between med errors and emotional exhaustion—as more med errors occurs, distress and frustration occur, could lead to emotional exhaustion. • Relationship between number of support staff and span of control—as number of direct reports increase, so does the number of additional supports ($p<0.01$). Implications for nurse managers: • Nurse leader relationship with nursing staff fosters positive safety climate. • Interactional justice needs to be part of leader practice in order to advocate for safe care. Incorporating skills of empathy, relating, listening, responding to concerns will improve relationships between nurse leaders and nursing staff.
Quality of the Evidence	Level of evidence VI. Strength—implications for nurse managers. Limitations—some effect of bias due to self-report survey. Voluntary nature of survey so potential for non-response bias. Sample size from single province.
Notes	

Legend: (*abbreviations)*

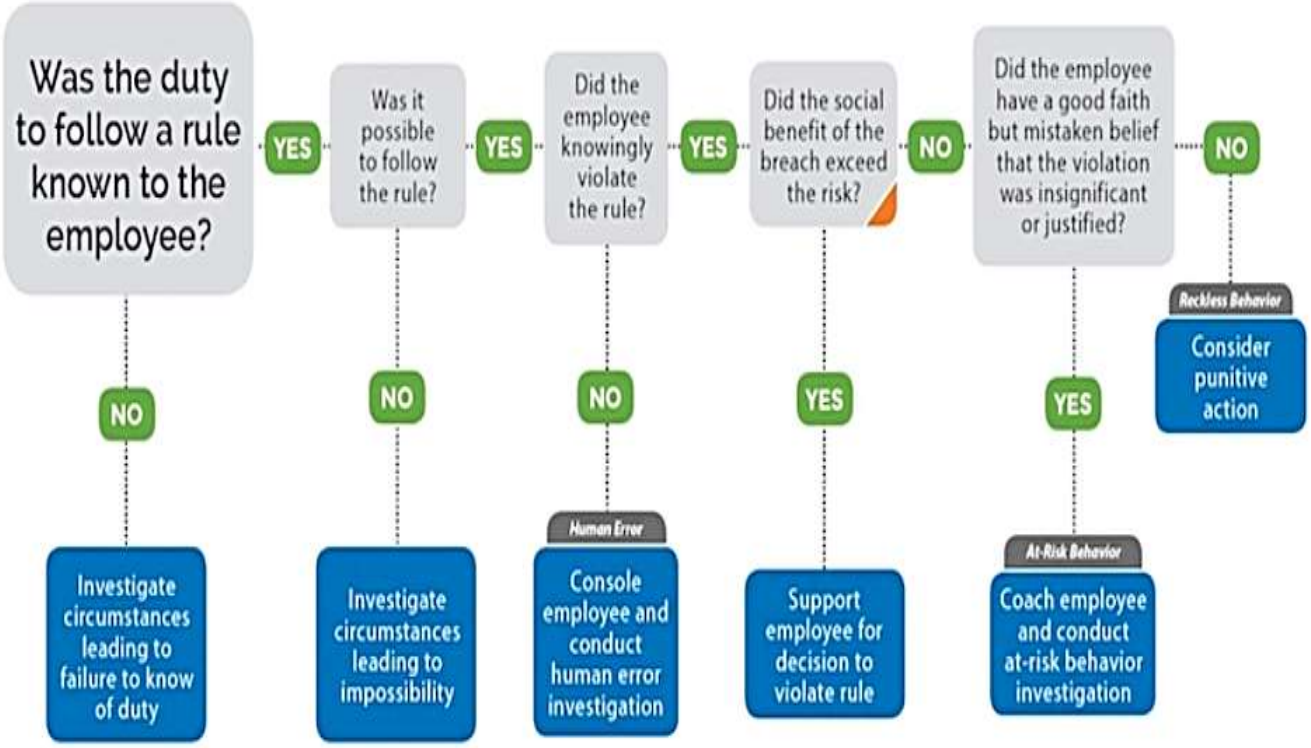
comm: communication, org: organization, psc: patient safety culture, HC: healthcare, mgmt.: Management, Hosp: hospital, NM: Nurse Managers, SAQ: Safety Attitudes Questionnaire, TFL: Transformational Leadership, CNO: Chief Nursing Officer, AHRQ: Agency for Healthcare Research and Quality, ae: adverse event

APPENDIX B. JUST CULTURE ALGORITHM© (Outcome Engenuity, 2017). Reprinted with permission.



DUTY TO FOLLOW A PROCEDURAL RULE [system largely controlled by the employer]

NOTE: This path applies when the employee works within a system and is responsible for being a reliable component within that system.

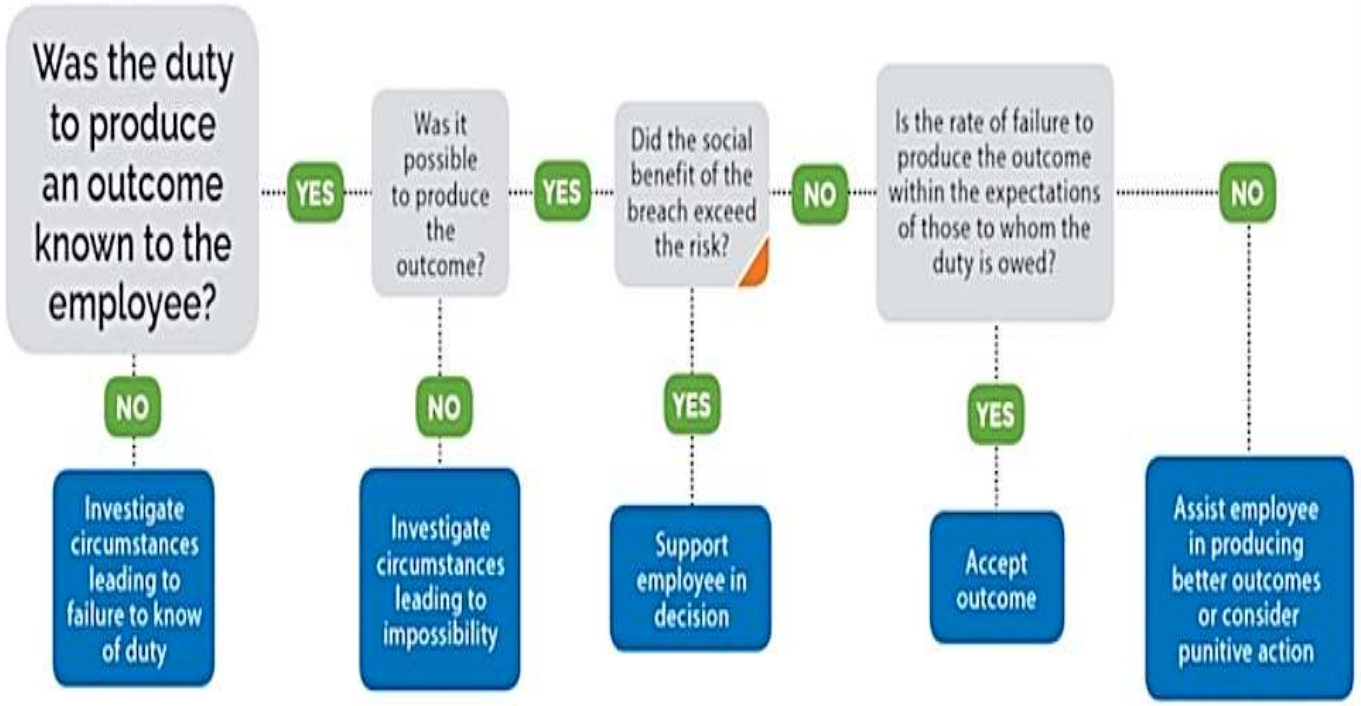


When working under a duty to follow a procedural rule within a system, an employee will be subject to punitive action when they have acted with reckless disregard toward the risk associated with non-compliance.

[◢ burden of production falls on employee]

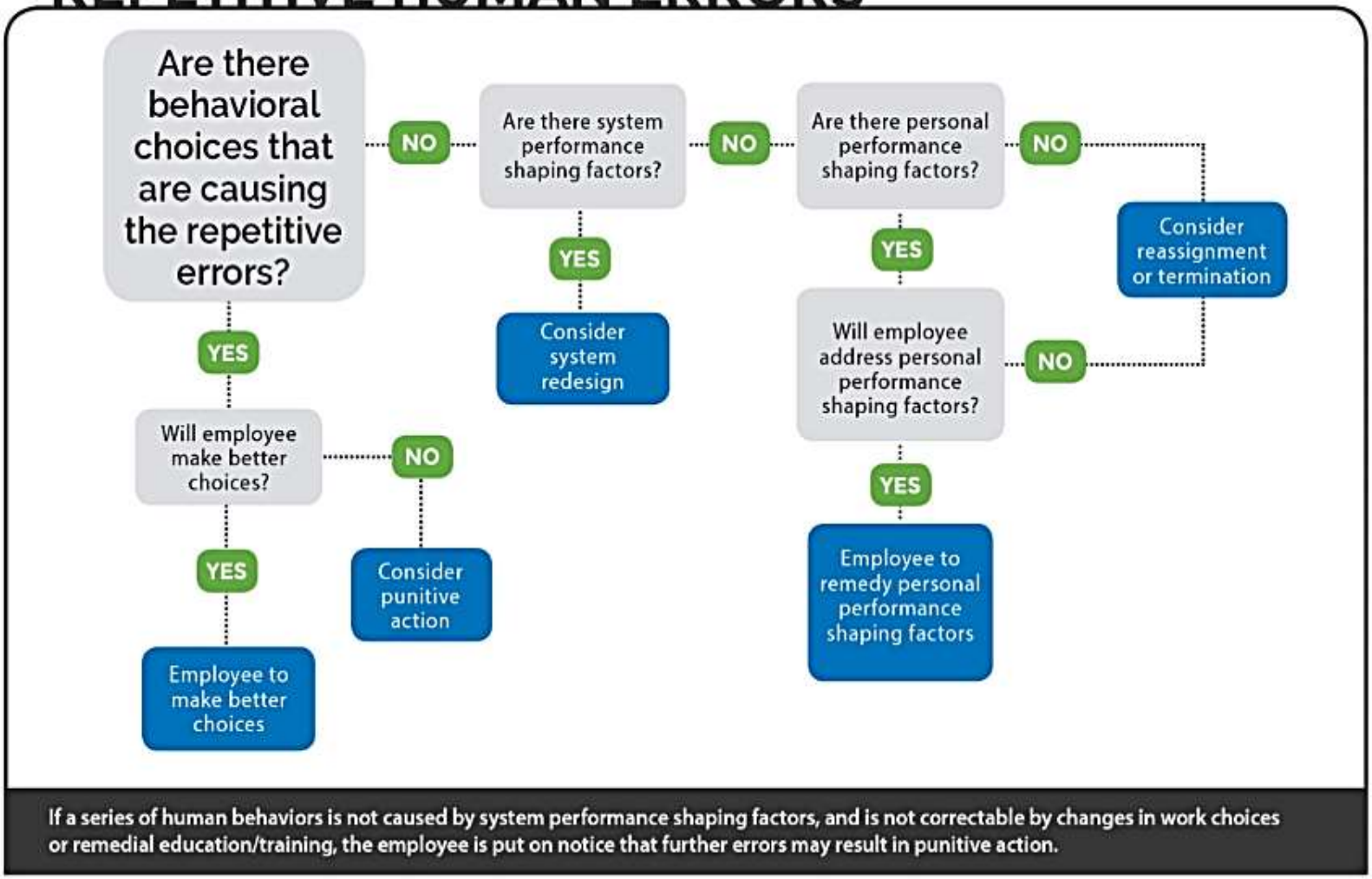
DUTY TO PRODUCE AN OUTCOME [system largely controlled by the employee]

NOTE: This path applies when the employee is aware that he controls the system and is responsible for the output of the system.



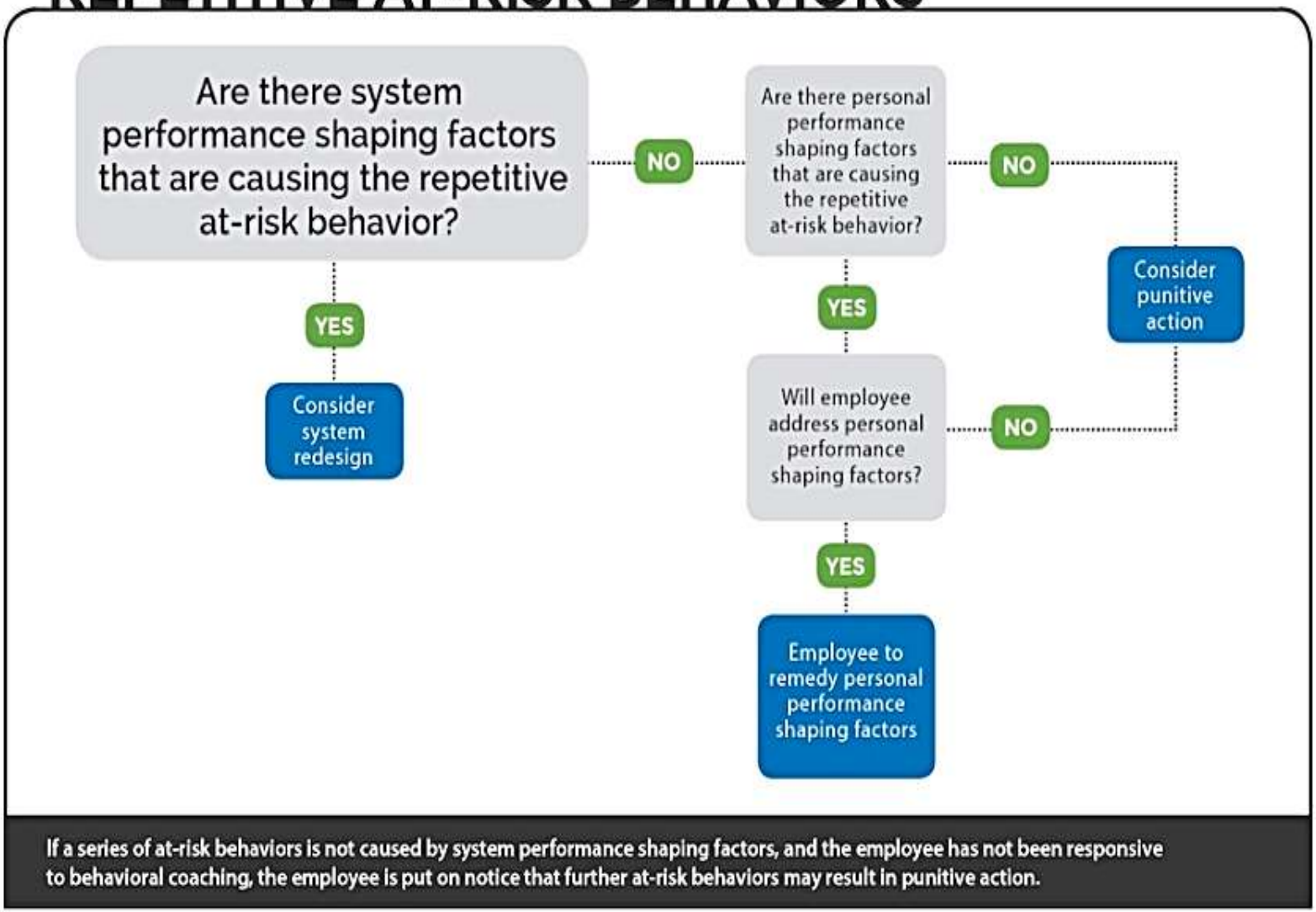
When working under a duty to produce an outcome, an employee will be held accountable as directed by the code of conduct and individual policies. These policies put the employee on notice of the duty and prescribe acceptable outcomes attached to each duty (e.g. time and attendance, dress code). [*burden of production falls on employee*]

REPETITIVE HUMAN ERRORS



If a series of human behaviors is not caused by system performance shaping factors, and is not correctable by changes in work choices or remedial education/training, the employee is put on notice that further errors may result in punitive action.

REPETITIVE AT-RISK BEHAVIORS



If a series of at-risk behaviors is not caused by system performance shaping factors, and the employee has not been responsive to behavioral coaching, the employee is put on notice that further at-risk behaviors may result in punitive action.

David Marx <dmarx@outcome-eng.com> Summer Fryar; + 2 7/8/2019

Re: follow-up after Certification Course

Renee,

It is a pleasure to hear from you.

First, the use of "accept" is something I introduced in Dave's Subs and have continued to use. If there was harm, and the person felt some level of guilt, the act of consoling is appropriate. If there was no harm, the act of consoling seems over-the-top for some. If its simply a human error, we can accept it, learn from it, and move on. Both have the same intention.

Regarding the use the algorithm, please feel free to use in your dissertation in any way you choose, as long as you acknowledge it is copyrighted and used with permission. Consider this email the permission to use.

Warmest,

David Marx
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APPENDIX C. POWERPOINT SLIDES FOR EDUCATIONAL SESSION ONE

1

2

Objectives

1. Review core Just Culture concepts, including 3 behaviors and 3 duties.
2. Illustrate behaviors with examples of current practice.
3. Describe how to complete an event investigation and use of the Just Culture algorithm.

3

Current ideas / beliefs about Just Culture

Write on your card

(for your self-reflection only)

your thoughts or beliefs about Just Culture.

4

Why are we reviewing Just Culture?

- Project site Culture of Safety 2018 Survey results reflected an increase for the question "Staff worry their mistakes are held against them".

Culture of Safety Survey response (*n*), trend for grades and non-punitive response to human error				
	Feb 2012	Sept 2014	Oct 2016	Feb 2018
Response (*n*)	1408	621	222*	879 (13.5%)
Overall Patient Safety Grade (Percent Excellent)	37%	31%	44%*	45%
Non-punitive response to human error	42%	43%	55%*	55%

(L. Harmon, personal communication, November, 9, 2018) *suburban sites excluded

5

Why are we reviewing Just Culture?

YOU are a Nurse Leader at the project site.

Nurse leaders (YOU) have an important role in supporting responses to staff after an adverse event has occurred.

Appropriate responses to events include:

- event investigation,
- supportive communications,
- sharing learnings, and
- supporting plans to prevent future harm

These responses support Just Culture,
and the entire project site Patient Safety Culture.

(Armstrong & Laschinger, 2006; Fischer, Jones, & Verran, 2017; Kanerva, Kivinen, & Lammintakanen, 2017; Nembhard & Edmondson, 2006; Xie et al, 2017)

6

What is Just Culture?

- A model that balances justice and accountability, with learning from events.

Just Culture does:

- Promote justice with responses.
- Promote accountability (acceptance, or coaching, or discipline).
- Promote learning from events, with safe environments for dialogue.

Just Culture does not:

- Ignore errors or bad behavior.
- Promote or allow repetitive poor behavior.
- Account for the outcomes of events.

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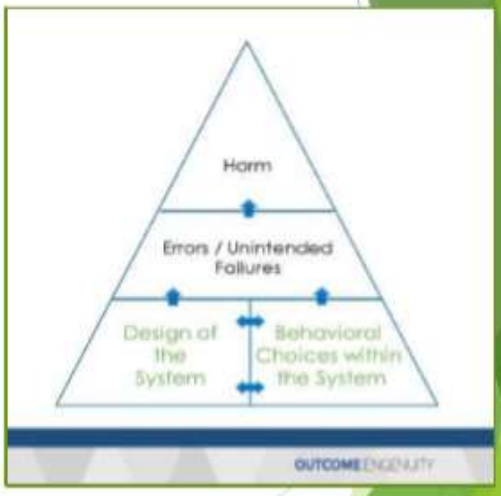
7

What is Just Culture?

- We monitor all behaviors, and manage system design and safety culture.
- Why? It's about trying to prevent harm.
- System Design and Behavioral Choices



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8

Risk Monitor

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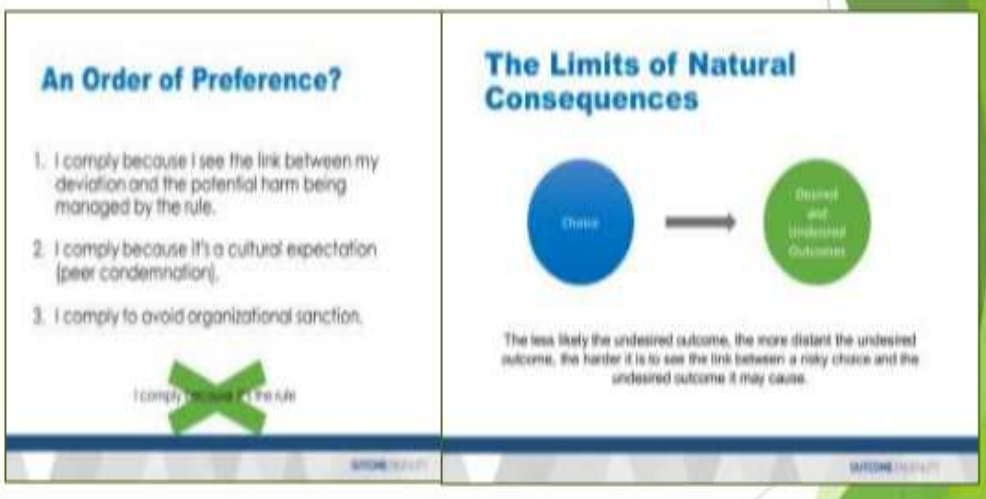
9

Risk Monitor



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10

Actually 5 behaviors

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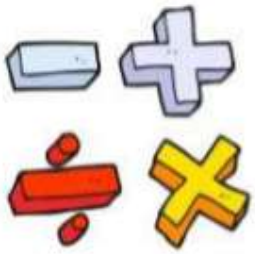
11

Human error



12

At-risk behavior

13

Reckless behavior

Did you hear about the patient....?

14

3 behaviors

- **Human Error:**
  - Forgetting something; Miscommunication; Mistake
  - "Unintended conduct—where we should have done other that what we did" (p. 17)
- **At-risk Behavior:**
  - Speeding; taking shortcuts; not washing hands
  - "A choice where risk is not recognized, or is mistakenly believed to be justified." (p. 18)
- **Reckless Behavior:**
  - Drunk driving; conversation about a patient in crowded elevator; skipping a safety task knowing it is unjustifiably dangerous
  - "Conscious disregard of a substantial and unjustifiable risk of harm" (p. 18)

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15

3 duties

- The duty to avoid causing unjustifiable risk or harm (don't do)
- The duty to follow procedures (how to)
- The duty to produce outcomes (what to do)

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16

Just Culture Algorithm©

- Using an algorithm, or decision tree, supports leaders in making decisions on how to hold staff accountable, as well as remain consistent. (Morris, 2011)
- Just Culture algorithm supports event investigation.
- 3 duties, and 3 behaviors
- Which action do we take?
  - Accept the error,
  - Coach the at-risk behavior, or
  - Punish the reckless behavior.

Marx, D. (2019). Just Culture Certification Course Workbook. *Outcome Engenuity*. 1-103.; Morris, S. (2011). Just Culture-Changing the environment of healthcare delivery. *Clinical Laboratory Science*, *24*(2), 120-124. DOI: 10.29074/ascls.24.2.120.

17

Event Investigation

- What happened?
- What normally happens?
- What does the procedure require (if applicable)?
- Why did it happen?
- How was the organization managing the risk?

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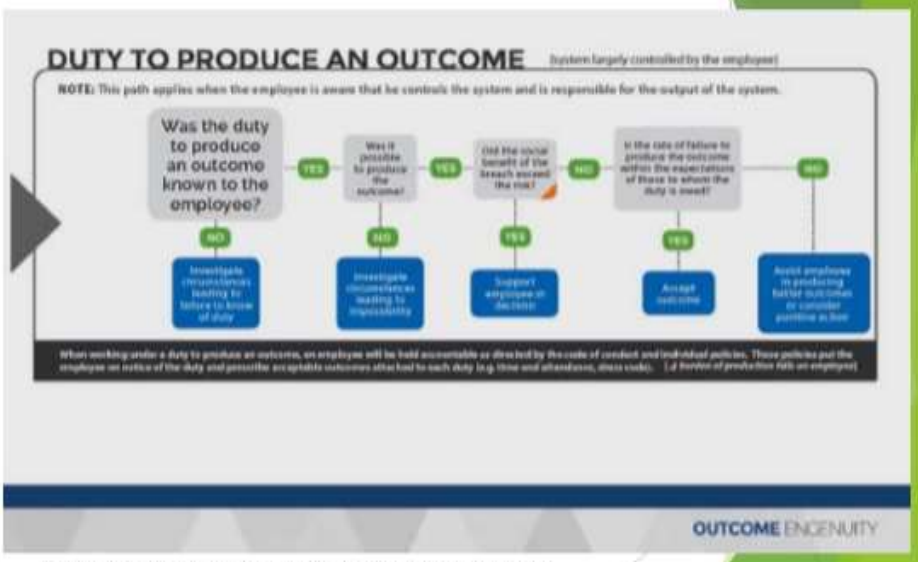
18

Scenario 1

- An employee on your unit arrived tardy today for their shift.
  - On the way into work, this employee encountered an automobile accident and stopped to give aid.
  - This employee has had numerous prior time & attendance problems.

19



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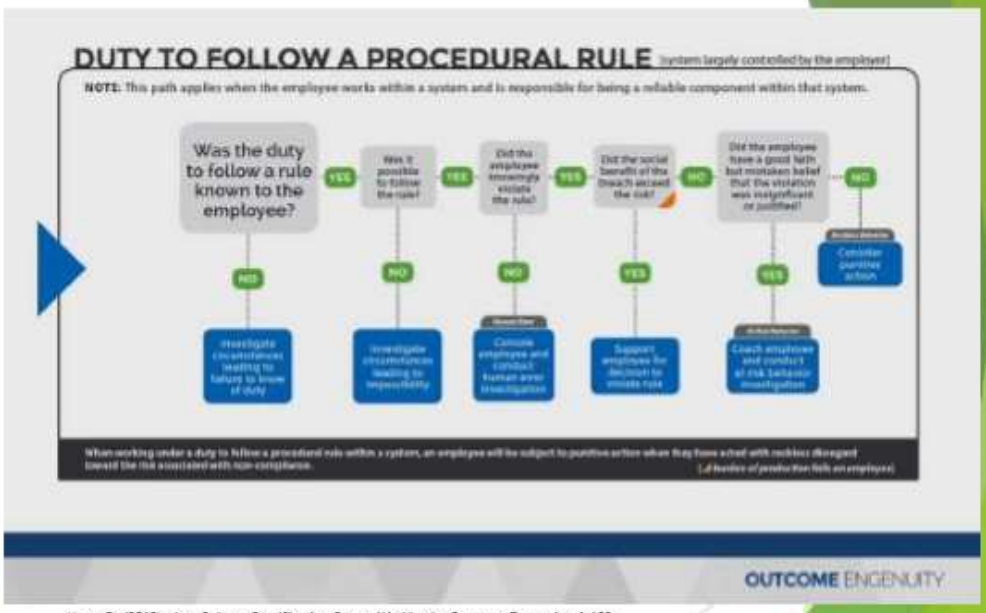
20

Scenario 2

- A nurse manager of a partner unit is walking down the hall to meet with this unit's nurse manager. He sees a patient trying to get out of bed. He notices the yellow Falls Risk bracelet on the patient, and quickly goes into the room to assist the patient (he did not perform hand hygiene prior to entering the room). The patient was assisted to the sink, to brush her teeth, and back to bed.

21



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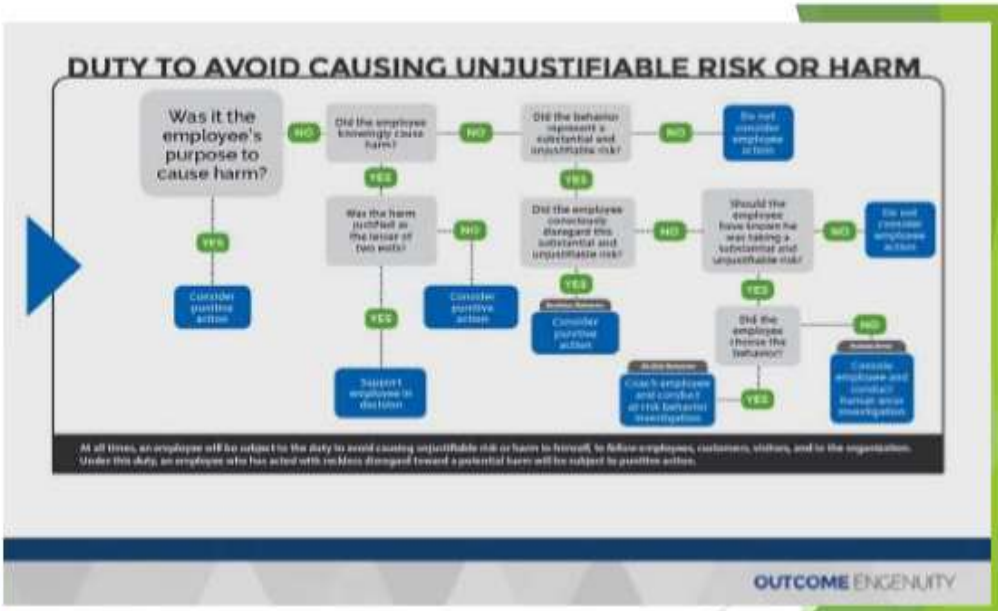
Scenario 3

- A nurse in a patient care area appears very drowsy. A coworker encouraged the nurse to take a short break, and get some coffee. The nurse returned from break, still fairly drowsy. The coworker noticed the nurse skipping the double-check with a high-alert medication, and informs the Charge Nurse. Notification was made to the Nurse Manager regarding concerns about the nurse.
  - Nurse has recently had a family sickness in the house.
  - Nurse has been battling a back injury, and admits to having problems with pain medications.

23



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24

Next steps

- Complete evaluation.
- Use what you learn.
- Make sure you are signed up in LMS for Session 2.
- Bring your algorithm and event investigation tool with you to Session 2.

25

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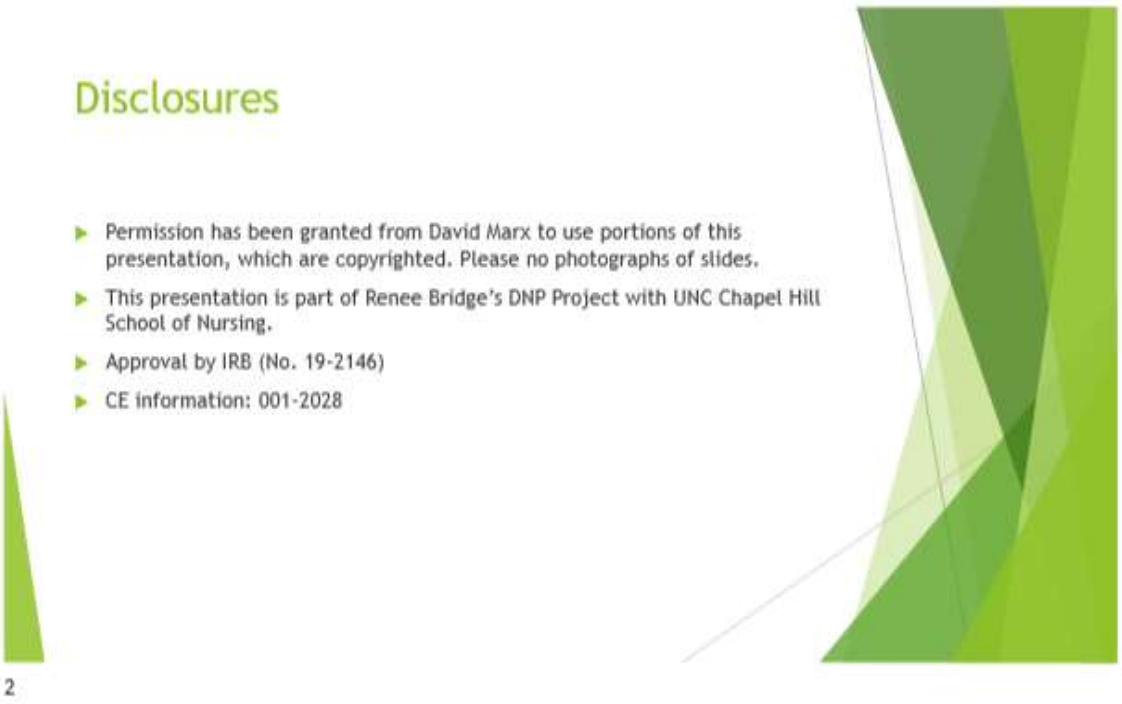
APPENDIX D. POWERPOINT SLIDES FOR EDUCATIONAL SESSION TWO

1



2

Objectives

1) Brief review of Just Culture concepts.
2) Conduct simulated event investigation.
3) Debrief simulated event, sharing learnings.

3

Just Culture

- Focus on system design and behaviors
- A model that balances justice and accountability, with learning from events.

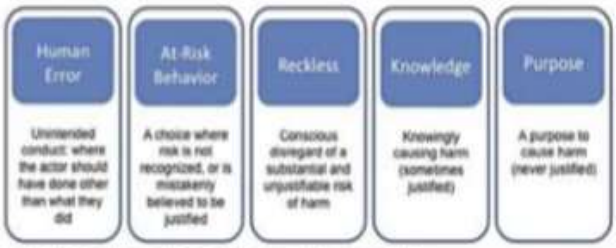


Fig. 1. The 5 behaviors. (Copyright Outcome Engenuity 2017.)
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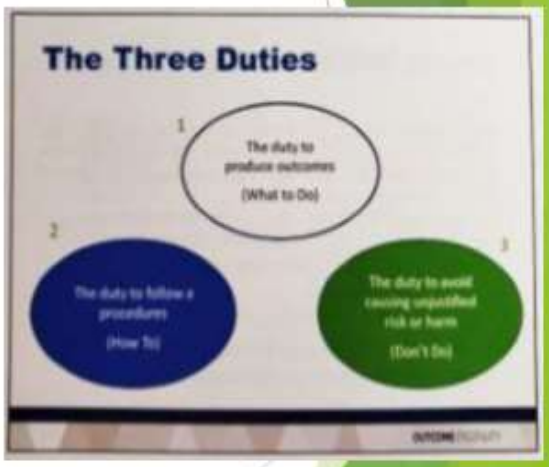
4

3 duties

- The duty to avoid causing unjustifiable risk or harm (don't do)
- The duty to follow procedures (how to)
- The duty to produce outcomes (what to do)



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5

The Big Event!

- Review event in groups.
- Use algorithm to support event investigation.

6

Event Investigation

- What happened?
- What normally happens?
- What does the procedure require (if applicable)?
- Why did it happen?
- How was the organization managing the risk?

Marx, D. (2019). Just Culture Certification Course Workbook. *Outcome Engenuity.* 1-103.

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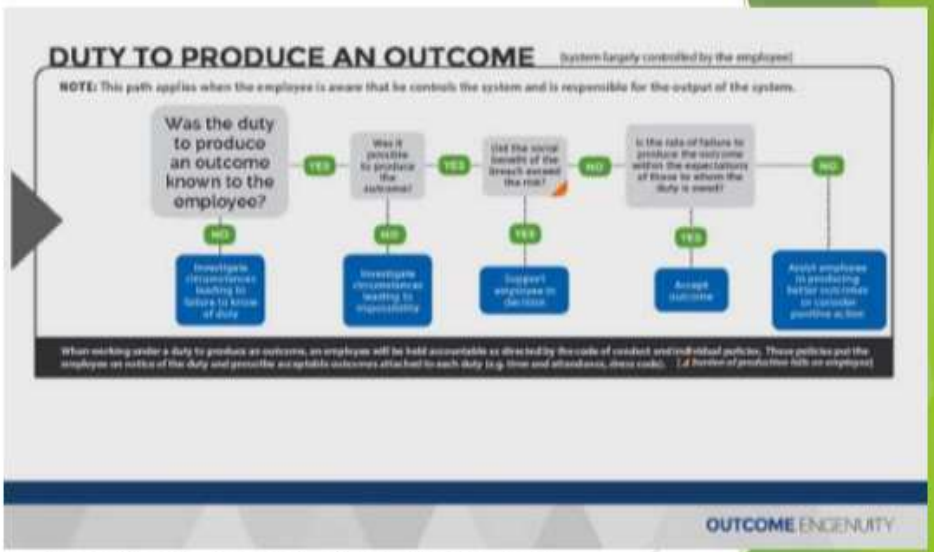

Marx, D. (2019). Just Culture Certification Course Workbook. *Outcome Engenuity.* 1-103.
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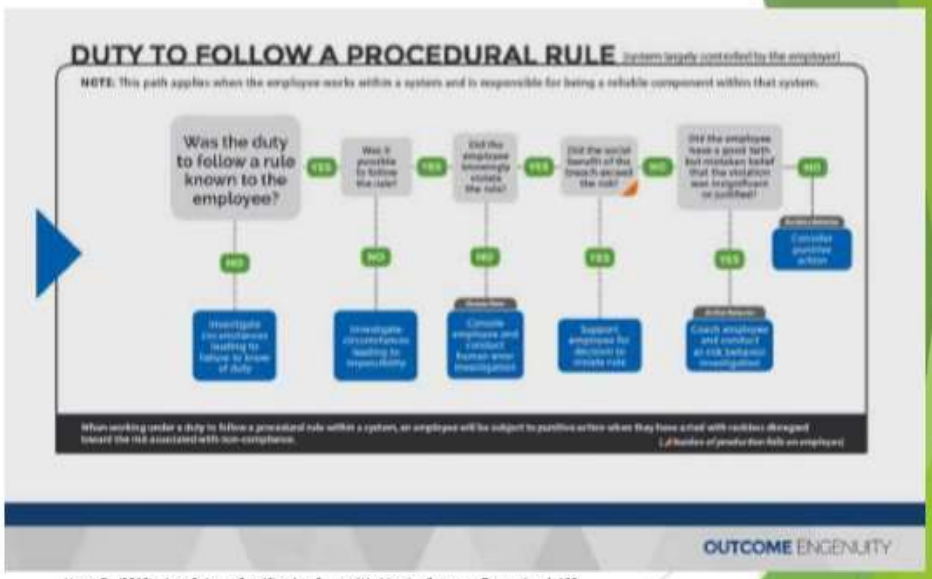

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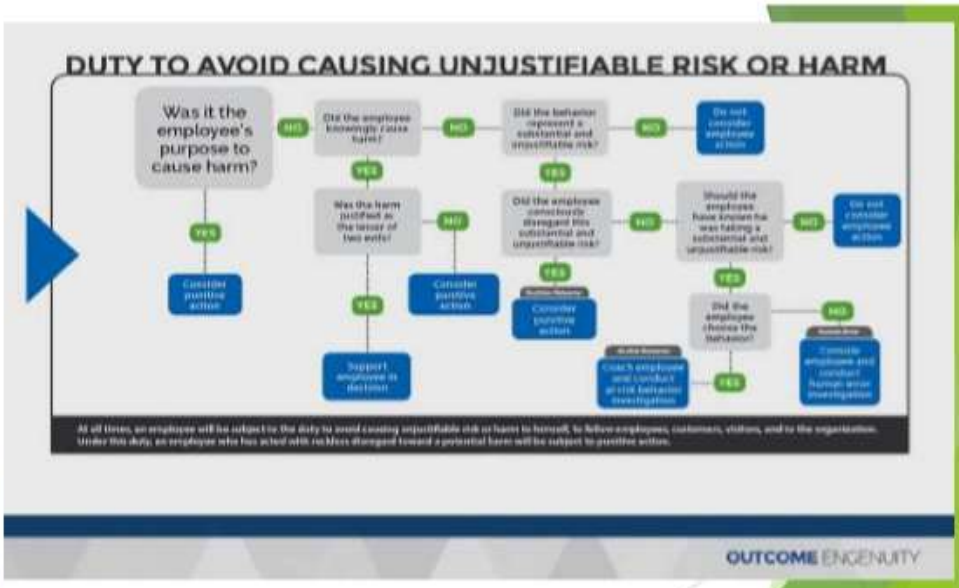

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Conversations with "staff" involved in the event (Role Play)

- Event investigation demonstrations, with Just Culture certified nurses (Janice Laurore and Roger Adkins).
- What did you see in the conversations?
  - What to do, or not do?

11

Conversations with "staff" involved in the event (Role Play)

- Choose a buddy.
- Take turns demonstrating follow-up conversations after your event investigate on from the Big Event.
- Share feedback with the group.

12

Next Steps

- Complete evaluation for session, and post-survey (email from the site coordinator with link).
- Use what you have learned.

THANK YOU for your participation!

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APPENDIX E. CASE SCENARIO FOR EDUCATIONAL SESSION TWO

Role	Name	Role	Name
Charge Nurse	Arlene	Clinical Nurse Manager	Frank
New grad nurse	Beverly	Team Leader	Ginny
Preceptor nurse	Chris	Staff Nurse	Hope
Float / SRT nurse	Diane	Preceptor nurse	Inez
Unit Secretary	Ellen	New grad nurse	Janet

The unit was buzzing with excitement, their new grads started this season. When **Charge Nurse Arlene** received report, it was noted that the patient in room 5 was very confused. CRT had been to see them on their rounds on the prior shift.

- After shift report, **New Grad nurse Beverly** and **Preceptor nurse Chris** started with their plan for the shift. They were caring for the patients in Rooms 1,2,3 and 4.
- **Float / SRT nurse Diane** was caring for the patients in Rooms 5,6,7,8. **Diane** had not worked on this unit before, but has the competency for this level of care.
- **Nurse Hope** was caring for the patients in Rooms 9,10,11,12.
- **New grad nurse Janet** and **Preceptor nurse Inez** were caring for the patients in Rooms 13, 14, 15, 16.
- **Unit Secretary Ellen** was present, but not feeling well. She mentioned to **Charge Nurse Arlene** that she may need to leave early.
- **Clinical Nurse Manager Frank** and **Team Leader Ginny** were at an offsite training 2 hours.

Diane calls **Arlene** to ask for assistance getting access to the Pyxis. **Arlene** doesn't have that ability, so she calls **Ginny**, who is in a meeting.

Patient in room 5 was increasingly confused, and has changed the way they are breathing.

Beverly and **Chris** head into room 1 with Insulin (high-alert medication and needs dual verification).

****The Code Blue alarm sounds on the unit and is announced overhead for Code Blue in Room 5. ****

Chris quickly directs **Beverly** to go on into room 1 to give the Insulin, since he had to go to this Code.

Beverly felt a little uneasy about this, but also thought she should follow the direction of her preceptor. She went into room 1, and gave the Insulin. Almost instantly, she recognized that **she had not scanned the med**. In order to avoid admitting her mistake, she did not say anything in the room or to the patient about it. She tried to call **Chris** and **Arlene**, but they were in room 5 with the Code.

The emergency response efforts go well in room 5, and the patient is transferred to Critical Care. **Arlene** and **Diane** are soon back on the unit.

Staff Nurse **Inez** gives several messages to **Arlene**.

- **Ellen** had to leave early, as she was ill.
- There will be an unexpected downtime later this afternoon for the call bell and Vocera system.
- Lab is down, no add-ons at this time.
- **Beverly** was trying to get in touch with you. Not sure what she needed...
- Glad you are back, it's been really busy up here...got to go.

Arlene is now helping to cover the desk, and get caught back up on these items. She is tied up on a phone conversation regarding a question from a discharged patient, and **she does not get the messages out to the team regarding the downtime with Vocera or about the lab.**

Beverly and **Chris** are waiting on labs to come back from the Potassium that **Beverly** added on to the AM labs while **Chris** was in the Code. After an hour, **Chris** asks **Beverly** about the lab, and she tells him what she did. **Chris** directs Beverly that they need to call the lab. They call together, and find out about the inability to process add-ons. They identify a solution with the lab for the Potassium. After the phone call, **Chris** talks calmly and in a supportive manner

with **Beverly** in order to emphasize the learning from this situation. (He still remembers what it is like to be a new grad, as it was just 1.5 years ago for him!) **Beverly** felt supported, and she felt comfortable opening up about the Insulin. She and Chris talked about this as well, and identified what could be done differently next time to prevent this mistake.

Frank and **Ginny** are back from their offsite meeting. They are catching up on all of the action with **Arlene**. This prompts **Arlene** to recall that she neglected to deliver the messages to the team regarding Vocera downtime and the lab. She quickly delivers the messages to the team. When **Arlene** talks to **Chris**, he mentioned to her about the delay he and Beverly experienced with Potassium. **Arlene snaps back, "Yeah, the lab is down so much now, it's becoming the norm. Maybe this will teach your new grad to check on things more closely!"**

Frank and **Ginny** meet with **Beverly** and **Chris** for their weekly progress meeting. **Beverly** is sharing about her week, and the many experiences she has had. She is nervous to share about the Insulin mistake, but does share because **Chris** was so supportive. **Frank** was upset that his new grad had made a mistake on a high-alert medication, but he was pleased that his preceptor had been supportive. He felt like some sort of punishment needed to happen because of the mistake, and the emphasis on correct scanning for Insulin, but he was conflicted because the new grad is learning.

Chris talked with **Frank** separately about **Arlene's** comments about the lab, and **Beverly. Frank** was disappointed to hear this, as he and **Arlene** have had multiple conversations about her communications, especially when she is in Charge.

New grad nurse Janet and **Preceptor nurse Inez** are divided temporarily while **Inez** is traveling with a patient to Radiology. **Inez** advises that **Janet** stay on the unit to keep an eye on the patients, and check in with **Arlene** or **Hope** if needed. **Inez** leaves the unit with the patient in room 13. **Janet** made rounds on the patient in room 16, who was acting differently than earlier in the shift. **Janet** called **Arlene** to let her know about this change. **Arlene said, "Doesn't sound too urgent.... Inez can help you when she gets back."** **Janet** felt uneasy. She felt conflicted because she knew she had other tasks to complete, and didn't want to fall behind. She activated the bed alarm on the patient, and went to complete her other tasks.

Discharge orders are received for the patient in room 15. **Janet** had completed discharges with **Inez** before, and felt comfortable. She had heard **Frank** talk about the importance of timely discharges in huddles. **Janet** reviewed the medications, and everything looked correct. She printed the AVS, and reviewed the discharge instructions with the patient in room 15.

Janet was in Room 14 giving medications when she heard the bed alarm sounding off from room 16. **Hope** heard the alarm too, and rushed toward room 16. **Janet** excused herself from Room 14 as quickly as she could, but she saw her **patient in room 16 on the floor when she arrived**. **Janet** was very upset that her patient had fallen. She helped the patient back to bed, and again called **Arlene** to let her know that her patient had fallen. **Arlene responded in a frustrated tone: "Oh no! What happened? I knew this was going to be a bad day! I'm coming right now!"** **Inez** heard the response from **Arlene** as she was returning to the unit, and could see that **Janet** was upset. **Inez** and **Janet** took care of the patient's needs and left the room. They called the Remote Observers to ask for an Avasys for Room 16.

APPENDIX F. PRE-INTERVENTION SURVEY

Just Culture Assessment Tool

PIC_Dir: **Directions:** You are being asked to complete the survey as part of a Doctorate of Nursing Practice quality improvement project. The survey will be administered twice, once before and then after two educational sessions on Just Culture. You are now being asked to complete the survey for the first time and before you begin the first educational session.

Because we need to connect your pre to your post responses and maintain your anonymity to protect your privacy, you'll be asked to use a process for generating a Personal Identification Code. You are the only person who will know this information and the combination of letters and numbers that will reflect your unique link for responses to the surveys. This process helps avoid identifying you in any way.

Therefore, please CAREFULLY furnish the following information:

PIC_1 Choose the letter below that represents the **First Letter** of your **MOTHER'S FIRST NAME:**

A (1)	N (14)
B (2)	O (15)
C (3)	P (16)
D (4)	Q (17)
E (5)	R (18)
F (6)	S (19)
G (7)	T (20)
H (8)	U (21)
I (9)	V (22)
J (10)	W (23)
K (11)	X (24)
L (12)	Y (25)
M (13)	Z (26)

PIC_2 Choose the letter below that represents the **First Letter** of your **FATHER'S FIRST NAME:**

A (1)	N (14)
B (2)	O (15)
C (3)	P (16)
D (4)	Q (17)
E (5)	R (18)
F (6)	S (19)
G (7)	T (20)
H (8)	U (21)
I (9)	V (22)
J (10)	W (23)
K (11)	X (24)
L (12)	Y (25)
M (13)	Z (26)

PIC_3 How many *Older Brothers* do you have?

(including alive and deceased, step or otherwise) Please enter the number: _____

PIC_4 How many *Older Sisters* do you have?

(including alive and deceased, step or otherwise) Please enter the number: _____

PIC_5 Please choose the month in which you were born:

January -01 (1)	May -05 (5)	September -09 (9)
February -02 (2)	June -06 (6)	October -10 (10)
March -03 (3)	July -07 (7)	November -11 (11)
April -04 (4)	August -08 (8)	December -12 (12)

PIC_6 Choose the letter below that represents the **First Letter** of **YOUR MIDDLE NAME:**

A (1)	N (14)
B (2)	O (15)
C (3)	P (16)
D (4)	Q (17)
E (5)	R (18)
F (6)	S (19)
G (7)	T (20)
H (8)	U (21)
I (9)	V (22)
J (10)	W (23)
K (11)	X (24)
L (12)	Y (25)
M (13)	Z (26)

Instruction: Just Culture Assessment Tool

The next set of questions ask you specific questions about Just Culture. Please choose the answer that best reflects your response.

The following definitions are relevant for the purposes of this survey: "Supervisor" is defined as Team Leader, Nurse Manager, Nurse Director, or CNO. "Management" is the person to whom you report.

Q1 The management does a good job of sharing information about events.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q2 We do not know about events that happen in our unit. (REVERSE SCORED)

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q3 I often hear about event conclusions and outcomes.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q4 Staff feel uncomfortable discussing events with supervisors. (REVERSE SCORED)

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q5 Supervisors respect suggestions from staff members.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q6 Staff can easily approach supervisors with ideas and concerns.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q7 If I had a good idea for making an improvement, I believe my suggestion would be carefully evaluated and taken seriously.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q8 I trust supervisors to do the right thing.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q9 Staff members are usually blamed when involved in an event. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q10 Staff members fear disciplinary action when involved in an event. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q11 When an event occurs, the follow-up team looks at each step in the process to determine how the event happened.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q12 I feel comfortable entering reports about events in which I was involved.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q13 Staff members use event reporting to "tattle" on each other. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q14 Coworkers discourage each other from reporting events. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q15 The event-reporting system is easy to use.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q16 Reports are being evaluated and reviewed after they are entered.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q17 I am given time to enter event reports during work hours.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q18 My supervisors encourage me to report.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q19 There are improvements because of event reporting.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q20 The hospital devotes time / energy / resources towards making patient safety improvements.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q21 By entering reports, I am making the hospital a safer place for the patients.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q22 The hospital sees events as opportunities for improvement.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q23 The hospital uses a fair and balanced system when evaluating staff involvement in events.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q24 I trust that the hospital will handle events fairly.

- o Strongly agree (1)
- o Agree (2)
- o Somewhat agree (3)
- o Neither agree nor disagree (4)
- o Somewhat disagree (5)
- o Disagree (6)
- o Strongly disagree (7)

Q25 The hospital adheres to its own rules and policies.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q26 I feel comfortable entering reports where others were involved.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q27 I am uncomfortable with others entering reports about events in which I was involved. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Dem_Instructions: Next, you will be asked some questions about your experience as a nurse, and your education in nursing. Please choose the answer that best describes your information.

Dem_1 What is your position?

- Nurse Manager (1)
- Team Leader (2)
- Other, please specify (3) _____

Dem_2 How long have you worked at the project site?

- In years: (1) _____

Dem _3 How many years' experience do you have as a nurse?

- In years: (1) _____

Dem_4 What is your highest nursing educational degree?

- Bachelors of Nursing (1)
- Masters degree (2)

Dem_5 How long have you been in a formal Nurse Leader position?

- In years: (1) _____

Dem_6 Please choose the age range that applies to you.

- 26-35 (1)
- 36-45 (2)
- 46-55 (3)
- 56-65 (4)
- >65 (5)

Dem_7 What, if any, prior education have you completed about Just Culture? (Choose all that apply.)

- One-on-one education. (1)
- Classroom education. (2)
- Online modules, such as LMS or other modules. (3)
- Information in Leadership meetings. (4)
- Conferences (5)
- Other, please specify: (6) _____

APPENDIX G: POST-INTERVENTION SURVEY

Just Culture Assessment Tool Post Survey

PIC_Dir **Directions:** You are being asked to complete the survey as part of a Doctorate of Nursing Practice quality improvement project. The survey will be administered twice, once before and then after two educational sessions on Just Culture. You are now being asked to complete the survey for the second time after the second educational session.

Because we need to connect your pre to your post responses and maintain your anonymity to protect your privacy, you'll be asked to use a process for generating a Personal Identification Code. You are the only person who will know this information and the combination of letters and numbers that will reflect your unique link for responses to the surveys. This process helps avoid identifying you in any way.

Therefore, please CAREFULLY furnish the following information:
The request for you to provide letters and numbers may look familiar to you if you took this survey a couple of months ago. Please respond the same as you did so that your first and second survey will be matched for analysis, while maintaining your anonymity.

If you have not taken this survey before: THEN you can skip these items and go straight to item Post 1.

PIC_1 Choose the letter below that represents the **First Letter** of your **MOTHER'S FIRST NAME:**

A (1)	N (14)
B (2)	O (15)
C (3)	P (16)
D (4)	Q (17)
E (5)	R (18)
F (6)	S (19)
G (7)	T (20)
H (8)	U (21)
I (9)	V (22)
J (10)	W (23)
K (11)	X (24)
L (12)	Y (25)
M (13)	Z (26)

PIC_2 Choose the letter below that represents the **First Letter** of your **FATHER'S FIRST NAME:**

A (1)	N (14)
B (2)	O (15)
C (3)	P (16)
D (4)	Q (17)
E (5)	R (18)
F (6)	S (19)
G (7)	T (20)
H (8)	U (21)
I (9)	V (22)
J (10)	W (23)
K (11)	X (24)
L (12)	Y (25)
M (13)	Z (26)

PIC_3 How many *Older Brothers* do you have?

(including alive and deceased, step or otherwise) Please enter the number: _____

PIC_4 How many *Older Sisters* do you have?

(including alive and deceased, step or otherwise) Please enter the number: _____

PIC_5 Please choose the month in which you were born:

January -01 (1)	May -05 (5)	September -09 (9)
February -02 (2)	June -06 (6)	October -10 (10)
March -03 (3)	July -07 (7)	November -11 (11)
April -04 (4)	August -08 (8)	December -12 (12)

PIC_6 Choose the letter below that represents the **First Letter** of **YOUR MIDDLE NAME:**

A (1)	N (14)
B (2)	O (15)
C (3)	P (16)
D (4)	Q (17)
E (5)	R (18)
F (6)	S (19)
G (7)	T (20)
H (8)	U (21)
I (9)	V (22)
J (10)	W (23)
K (11)	X (24)
L (12)	Y (25)
M (13)	Z (26)

Post_1 What activities have you participated in at THE PROJECT SITE regarding Just Culture?

_____

Post_2 Did you attend the Just Culture education sessions connected with this project?

- o Yes, on the following dates: (1)

_____

- o No (2)

Instruction: Just Culture Assessment Tool

The next set of questions ask you specific questions about Just Culture. Please choose the answer that best reflects your response.

The following definitions are relevant for the purposes of this survey: "Supervisor" is defined as Team Leader, Nurse Manager, Nurse Director, or CNO. "Management" is the person to whom you report.

Q1 The management does a good job of sharing information about events.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q2 We do not know about events that happen in our unit. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q3 I often hear about event conclusions and outcomes.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q4 Staff feel uncomfortable discussing events with supervisors. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q5 Supervisors respect suggestions from staff members.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q6 Staff can easily approach supervisors with ideas and concerns.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q7 If I had a good idea for making an improvement, I believe my suggestion would be carefully evaluated and taken seriously.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q8 I trust supervisors to do the right thing.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q9 Staff members are usually blamed when involved in an event. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q10 Staff members fear disciplinary action when involved in an event. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q11 When an event occurs, the follow-up team looks at each step in the process to determine how the event happened.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q12 I feel comfortable entering reports about events in which I was involved.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q13 Staff members use event reporting to "tattle" on each other. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q14 Coworkers discourage each other from reporting events. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q15 The event-reporting system is easy to use.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q16 Reports are being evaluated and reviewed after they are entered.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q17 I am given time to enter event reports during work hours.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q18 My supervisors encourage me to report.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q19 There are improvements because of event reporting.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q20 The hospital devotes time / energy / resources towards making patient safety improvements.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q21 By entering reports, I am making the hospital a safer place for the patients.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q22 The hospital sees events as opportunities for improvement.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q23 The hospital uses a fair and balanced system when evaluating staff involvement in events.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q24 I trust that the hospital will handle events fairly.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q25 The hospital adheres to its own rules and policies.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q26 I feel comfortable entering reports where others were involved.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

Q27 I am uncomfortable with others entering reports about events in which I was involved. (REVERSE SCORED)

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)

APPENDIX H. EMAIL GRANTING PERMISSION TO USE JCAT

RE: request to use JCAT

HJ

Hoffman, James <James.Hoffman@STJUDE.ORG>
Fri 2/15/2019 8:05 AM
To: Bridges, Renee Poulot
Cc: Burlison, Jonathan <Jonathan.Burlison@STJUDE.ORG> +

Inbox

To help protect your privacy, some content in this message has been blocked. To re-enable the blocked features, click here.

To always show content from this sender, click here.

You replied on 2/24/2019 7:48 AM.

Petschonek et al_JCAT_J...
140 KB

Show all 1 attachments (140 KB) Download Save to OneDrive - University of North Carolina at Chapel Hill

Hello Renee

Thank you for the interest in our work

Yes, we are happy to have you use the JCAT in your project. The entire survey is in attached (see appendix) -- it is also in pubmed central here https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4214367/

I would only ask that you cite the JPS paper in any presentation or publications, and of course we are interested in how it works for you so please feel free to drop us a line on how it goes for you.

One thing I have learned a lot about is how just culture is really connected with many other aspects of safety culture – need to think about (and measure) other aspects of safety culture as they all interact.

I'm copying my colleague Jon who is also an author on this paper

James M. Hoffman, PharmD, MS
Chief Patient Safety Officer
St. Jude Children's Research Hospital
Office: (901) 595-2767

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